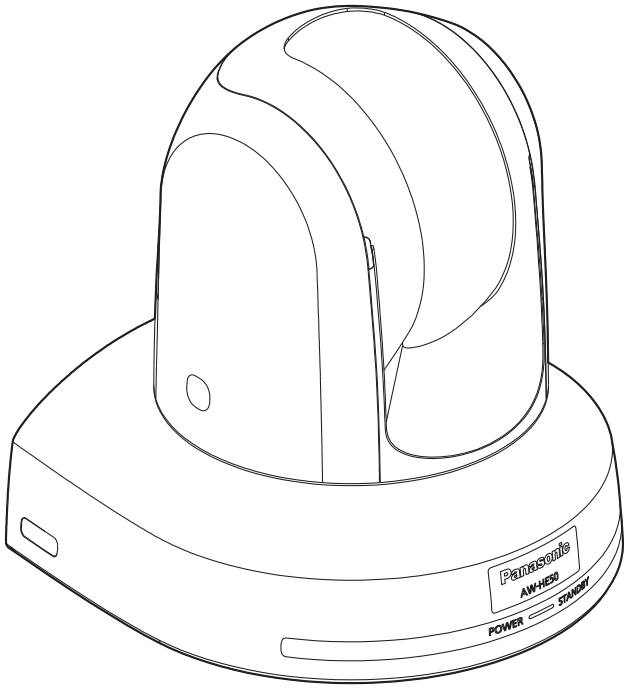
Panasonic

Operating Instructions <Basics>

Installation Instructions provided

HD Integrated Camera

Model No. AW-HE50HN
AW-HE50SN



Before operating this product, please read the instructions carefully and save this manual for future use.

For instructions on how to operate this HD Integrated Camera and how to establish its settings, refer to the "Operations and Settings" manual (PDF file) which can be found on the CD-ROM supplied with the camera.

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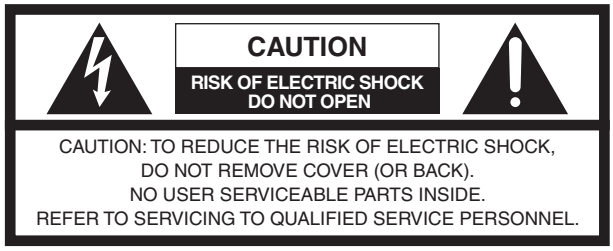
Safety precautions


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER SERVICEABLE PARTS INSIDE.
REFER TO SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (service) instructions in the literature accompanying the appliance.

WARNING:

■ **THIS APPARATUS MUST BE EARTHED**

To ensure safe operation, the three-pin plug must be inserted only into a standard three-pin power point which is effectively earthed through the normal household wiring.

Extension cords used with the apparatus must have three cores and be correctly wired to provide connection to the earth. Wrongly wired extension cords are a major cause of fatalities.

The fact that the apparatus operates satisfactorily does not imply that the power point is earthed or that the installation is completely safe. For your safety, if you are in any doubt about the effective earthing of the power point, please consult a qualified electrician.

For CANADA

This class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

WARNING:

- **TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.**
- **THE APPARATUS SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.**

WARNING:

TO PREVENT INJURY, THIS APPARATUS MUST BE SECURELY ATTACHED TO THE FLOOR/WALL IN ACCORDANCE WITH THE INSTALLATION INSTRUCTIONS.

CAUTION:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

FCC Note:
This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Warning:
To assure continued FCC emission limit compliance, the user must use only shielded interface cables when connecting to external units. Also, any unauthorized changes or modifications to this equipment could void the user's authority to operate it.

CAUTION:

In order to maintain adequate ventilation, do not install or place this unit in a bookcase, built-in cabinet or any other confined space. To prevent risk of electric shock or fire hazard due to overheating, ensure that curtains and any other materials do not obstruct the ventilation.

The socket outlet shall be installed near the equipment and easily accessible or the mains plug or an appliance coupler shall remain readily operable.

A warning that an apparatus with CLASS 1 construction shall be connected to a MAINS socket outlet with a protective earthing connection.

▭ indicates safety information.

IMPORTANT SAFETY INSTRUCTIONS

Read these operating instructions carefully before using the unit. Follow the safety instructions on the unit and the applicable safety instructions listed below. Keep these operating instructions handy for future reference.

1) Read these instructions.
2) Keep these instructions.
3) Heed all warnings.
4) Follow all instructions.
5) Do not use this apparatus near water.
6) Clean only with dry cloth.
7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10) Protect the power cord form being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11) Only use attachments/accessories specified by the manufacturer.
12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.
14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

▭ indicates safety information.

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How the model's Operating Instructions manuals are configured

- The manual of this HD integrated camera (hereafter, "the unit") is divided into two manuals: one is the <Basics> (this manual), and the other is the <Operations and Settings> (CD-ROM).
  Before installing the unit, be sure to read the <Basics> to ensure that the unit is installed correctly.
- This manual explains how to install the unit, and it details the network connection and setting procedures.
  For details on how to operate the unit and select its settings, refer to the "Operating Instructions <Operations and Settings>" (PDF file) on the CD-ROM supplied with the unit.
  To read PDF files, you will need Adobe® Reader® which is available from Adobe Systems.

■ Overview

- This unit is a compact full HD camera integrated with a pan-tilt head and featuring a newly developed 1/3-inch full HD MOS sensor and digital signal processor (DSP).
- In addition to its optical 18× zoom lens, the unit comes with a 10× digital zoom to achieve high-quality shooting that overflows with ambiance.
- Two models are available: the HDMI model AW-HE50H which is ideal for distributing the signals of TV conference and other video events, and the SDI output model AW-HE50S which is ideal for creating content.
  Besides IP control, both models allow connection with existing camera controllers by way of serial control.

■ Concerning the Operating Instructions

- For the purposes of this manual, the model number AW-HE50HN is referred to as the “AW-HE50H”, the AW-HE50SN as the “AW-HE50S” and model numbers AW-HE50HN and AW-HE50SN will be referred to together as the “AW-HE50”.
  Similarly, the model number AW-RP655N is referred as the “AW-RP655”, the AW-RP555N as the “AW-RP555” and the AW-RP50N as the “AW-RP50”.

■ Required personal computer environment

CPU	Intel® Core™2 DUO 2.4 GHz or faster recommended
Memory	512 MB or more (When using Microsoft® Windows Vista®: 1 GB or more, and when using Microsoft® Windows® 7: 1 GB [32 bits] or 2 GB [64 bits] or more)
Network function	10Base-T or 100Base-TX port ×1
Image display function	Resolution: 1024 × 768 pixels or more Color generation: True Color 24 bits or more
Supported operating system and Web browser	Microsoft® Windows® 7 Professional 64-bit*1 Microsoft® Windows® 7 Professional 32-bit*1 Windows® Internet Explorer® 8.0*2
	Microsoft® Windows Vista® Business SP1 32-bit Windows® Internet Explorer® 7.0
	Microsoft® Windows® XP Home Edition SP3*3 Microsoft® Windows® XP Professional Edition SP3*3 Microsoft® Internet Explorer® 6.0 SP3
	*1: This cannot be used in the Windows® XP compatibility mode. *2: This cannot be used with the 64-bit version of Internet Explorer® 8.0. *3: The Microsoft® Windows® XP Professional x64 Edition is not supported.
Other	CD-ROM drive (for using the Operating Instructions and various software) Adobe® Reader® (for browsing the Operating Instructions on the CD-ROM)

IMPORTANT

- **Failure to provide the required personal computer environment may slow down the delineation of the images on the screen, make it impossible for the web browser to work and cause other kinds of problems.**

✎ **Memo** ✎

- When using Microsoft® Windows Vista® or Microsoft® Windows® 7, refer to the “Notes on Windows Vista®/ Windows® 7” (page 84 in the <Operations and Settings>) for details on the personal computer environment that is required and on the precautions and other items.

■ Trademarks and registered trademarks

- Microsoft, Windows, Windows Vista, Windows 7 and Internet Explorer are either registered trademarks or trademarks of Microsoft Corporation in the United States and other countries.
- Intel and Intel Core are trademarks or registered trademarks of Intel Corporation in the United States and other countries.
- Adobe and Reader are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.
- Other names of companies and products contained in these Operating Instructions may be trademarks or registered trademarks of their respective owners.

■ About copyright and licence

Distributing, copying, disassembling, reverse compiling, reverse engineering, and also exporting in violation of export laws of the software provided with this unit are expressly prohibited.

■ Disclaimer of warranty

IN NO EVENT SHALL Panasonic System Networks Co., Ltd. BE LIABLE TO ANY PARTY OR ANY PERSON, EXCEPT FOR REPLACEMENT OR REASONABLE MAINTENANCE OF THE PRODUCT, FOR THE CASES, INCLUDING BUT NOT LIMITED TO BELOW:

① ANY DAMAGE AND LOSS, INCLUDING WITHOUT LIMITATION, DIRECT OR INDIRECT, SPECIAL, CONSEQUENTIAL OR EXEMPLARY, ARISING OUT OF OR RELATING TO THE PRODUCT;

② PERSONAL INJURY OR ANY DAMAGE CAUSED BY INAPPROPRIATE USE OR NEGLIGENT OPERATION OF THE USER;

③ UNAUTHORIZED DISASSEMBLE, REPAIR OR MODIFICATION OF THE PRODUCT BY THE USER;

④ INCONVENIENCE OR ANY LOSS ARISING WHEN IMAGES ARE NOT DISPLAYED, DUE TO ANY REASON OR CAUSE INCLUDING ANY FAILURE OR PROBLEM OF THE PRODUCT;

⑤ ANY PROBLEM, CONSEQUENTIAL INCONVENIENCE, OR LOSS OR DAMAGE, ARISING OUT OF THE SYSTEM COMBINED BY THE DEVICES OF THIRD PARTY;

⑥ LOSS OF REGISTERED DATA CAUSED BY ANY FAILURE.

■ Network security

As you will use this unit connected to a network, your attention is called to the following security risks.

① Leakage or theft of information through this unit

② Use of this unit for illegal operations by persons with malicious intent

③ Interference with or stoppage of this unit by persons with malicious intent

It is your responsibility to take precautions such as those described below to protect yourself against the above network security risks.

- Use this unit in a network secured by a firewall, etc.
- If this unit is connected to a network that includes PCs, make sure that the system is not infected by computer viruses or other malicious entities (using a regularly updated antivirus program, anti-spyware program, etc.).
- Protect your network against unauthorized access by restricting users to those who log in with an authorized user name and password.
- Apply measures such as user authentication to protect your network against leakage or theft of information, including authentication information (user names and passwords), FTP server information and DDNS server information.
- Do not install the camera in locations where the camera or the cables can be destroyed or damaged by persons with malicious intent.

Characteristics

Multiple number of formats supported

- Switching between the 1080/59.94i, 720/59.94p and 480/59.94i formats can be accomplished using a menu. By using VIDEO OUT signals, HD format signals and SD format signals can be output at the same time.
- With the SD format, either Squeeze (16:9), LetterBox (16:9) or SideCut (4:3) can be selected.

1/3-inch MOS sensor and high-performance 18× zoom lens featured

- A newly developed 1/3-inch full HD MOS sensor and DSP (digital signal processor) are incorporated. High-quality pictures are obtained by video processing in many different kinds of ways.
- In addition to its optical 18× zoom lens, the unit comes with a 10× digital zoom to achieve high-quality images that overflow with ambiance.
- A dynamic range stretch (DRS) function that compensates for overexposure and loss of dark detail and a new hybrid digital noise reduction (Hybrid DNR) function for minimizing image lag even in dark locations and shooting scenes clearly are incorporated to reproduce clean and clear images in a wide range of applications.

Easy operation of unit enabled by its integration with a high-performance pan-tilt head unit

- Operations at the high speed of 90°/s
- Wide rotational angles with a panning range of ±175° and a tilting range from –30° to +90°
- Quiet operation with noise levels of NC35 (normal speed) and NC40 (when preset)
- Storage of up to 100 positions in the preset memory (The number of preset memory settings differs depending on the controller that is used with the unit.)

High degree of compatibility with Panasonic's currently available controllers, enabling a flexible system to be put together

- A maximum of five units can be operated by serial control from one of Panasonic's currently available controllers (AW-RP655, AW-RP555 and AW-RP50).
  (It may be necessary to upgrade the version of the controller in order to support the unit. The maximum distances between the units and controller is 1000 meters (3280 ft.). Use of an external device or some other means must be provided separately in order to extend the video signal connections.)
  The unit can also be used together with the cameras and pan-tilt head unit systems currently available from Panasonic System Networks Co., Ltd. so that an existing system can be used to advantage to put together a system that is even more flexible.

Integrated pan-tilt head unit, camera and lens to facilitate installation

- By designing the camera, lens and pan-tilt head as a single integrated unit, the time taken for the installation work has been drastically reduced.

Use of easy-to-operate wireless remote control (optional accessory) is possible

- A wireless remote control capable of operating up to four units can be used.
  It can easily be used to set the various functions or switch between them while viewing the menu screens.

Flexible camera layout enabled by simple connection and installation

- This unit features excellent connectivity and installability thanks to the IP control; a lightweight main unit, and the turn-lock mechanism, which enables the user to install it on his or her own (only when used indoors).

Energy-savings achieved by the compact main unit design

- By slimming down the unit's weight and dimensions, a low power consumption is yielded, and even the connection of a multiple number of units poses no concerns.

Easy connections and settings courtesy of IP control

- Up to a hundred units can be operated by IP connection from a Panasonic controller (AW-RP50).
  (The maximum length of the LAN cables is 100 meters [328 ft.].)
- By automatically recognizing the IP addresses and changing their allocation, the previous restrictions on the connections between the cameras and controllers using serial interfaces and the time and trouble taken to establish the various settings can be significantly reduced, and by configuring a network, flexible camera control can be implemented anywhere with any of the cameras.

Controller supported

- **AW-RP655**
- **AW-RP555**
- **AW-RP50**

- **It may be necessary to upgrade the version of the controller in order to support the unit. Consult with your dealer.**

Notes

■ When connecting the AW-RP655

- The camera menus that are operated using the LCD panel on the AW-RP655 cannot be used.

→ Use the camera menus displayed on the monitor which has been connected to the unit.

■ When connecting the AW-RP555

- The AW-RP555 periodically transmits the POWER-ON command to the pan-tilt head. This means when the unit has been selected from the AW-RP555, its power will be turned on again after several seconds even if the unit has been set to the standby mode by the web browser, IP-connected controller or wireless remote control (optional accessory).

Accessories

Check that the following accessories are present and accounted for.

Operating Instructions <Basics> (this manual) 1
Operating Instructions <Operations and Settings> (CD-ROM) 1
Mount bracket for installation surface (Hanging / Desktop) 1
Bracket mounting screws (bind-head) M4 × 10 mm 4
Main unit mounting screw (with flat washer, spring washer) M3 × 6 mm 1
Drop-prevention wire (already attached to the main unit) ... 1
Power cable (2 m [6.6 ft.]) 1
Cable cover 1
AC adapter 1

Installation precautions

In addition to heeding the points presented in the "Safety precautions", observe the following precautions as well.

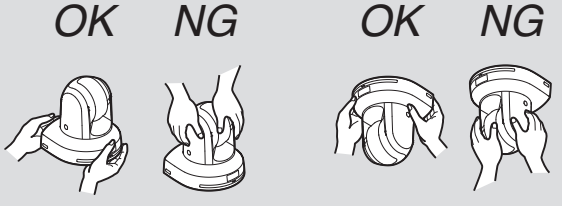
Ensure that the installation work complies with the technical standards governing electrical equipment.

This unit is for indoor use only.
It cannot be used outdoors.
Avoid installation in a location where the unit will be exposed to direct sunlight for extended periods or near a cooling or heating appliance.
Otherwise, deformation, discoloration, malfunctioning and/or problems in operation may result. Operate the unit where it will not be splashed or sprayed by water.

Use the unit with an installation where the unit is suspended from an overhead surface or with a stand-alone installation.
Do not use the unit on its side or tilted at an angle.

Notes

- Be absolutely sure to use the four bracket mounting screws (M4) for mounting the mount bracket.
  These are supplied with the unit. Do not use wood screws, nails, etc.
  In the case of a concrete ceiling, secure the unit using anchor bolts (for M4) or AY plug bolts (for M4).
  Recommended clamping torque
  M4: 1.47 N · m (15 kgf · cm)
- The withdrawal strength of the mounting location for each screw must be at least 196 N (20 kgf).
- When mounting the unit on a ceiling made of plasterboard, for instance, if it is not strong enough to support its weight, either reinforce the ceiling adequately or use the WV-Q105 direct ceiling mount bracket, which is sold separately.
- When using a mount bracket which is sold separately, read the handling instructions.
- Do not hold the camera head while undertaking the installation work. Doing so may cause malfunctioning.



Desktop installation **Hanging installation**

Concerning the installation location
Install the unit in a stable location which will not be susceptible to shaking. If the unit is installed in a location which is susceptible to shaking, this will cause the unit's images to shake in turn.
Install the unit after conferring in detail with your dealer.
Install the unit on a ceiling that is strong enough (such as a concrete ceiling).
If the unit is to be installed on a ceiling which is not strong enough, reinforce the ceiling sufficiently first.

Do not install or use the unit in the following kinds of locations.

- On walls (where the unit would be installed sideways)
- In locations (including places such as under the eaves of a building) where the unit would be directly exposed to rain or water
- In locations such as kitchens where there are high concentrations of steam and grease
- In outdoor locations or hot places where the temperature will exceed 40 °C (104 °F)
- In cold locations where the temperature will drop below 0 °C (32 °F)
- In locations where the humidity will exceed 85 %
- In locations where chemicals are used such as near swimming pools
- At sea, in coastal areas or in locations where corrosive gases are emitted
- In locations where radiation, X-rays, or strong radio waves or magnetic fields are generated
- In locations where the unit would be subject to a great deal of vibration such as on board a vehicle or ship (this unit is not designed to be used in vehicles)
- In locations where the temperature is subject to sudden changes such as near the air outlet of an air conditioner or near a door which allows the outside air to come in

What to avoid to ensure that the unit will perform stably over a prolonged period

- Using the unit for a prolonged period in a location with high temperature and humidity levels will cause its parts to deteriorate and shorten its service life.
- Ensure that a cooling unit or heating unit will not blow any air directly toward the installation location.

AW-HE50 main unit	Mounting conditions					
	Applicable mount bracket			Mounting onto the ceiling		
Mass	Model No.	Mass	Mounting	Recommended screws	No. of screws	Minimum withdrawal strength (per screw)
Approx. 1.4 kg [3.09 lbs.] (Including mount bracket)	Direct mount (supplied accessory)	Approx. 0.23 kg [0.51 lbs.]	Hanging/Desktop	M4 screws (supplied accessory)	4	196 N (20 kgf) ● Ensure that the mounting strength can support a weight that is at least five times the total mass of the equipment, including the camera's main unit.
	WV-Q105 (optional accessory)	Approx. 0.15 kg [0.33 lbs.]	For ceiling	M4 screws	4	

Installation precautions

Be absolutely sure to use the bracket and screws supplied when installing the unit.

- Do not mount the unit by employing any methods other than those specified.
- Do not remodel the mounting bracket or mounting screws provided with the unit.

Tightening up the mounting screws

- Tighten up the screws and bolts securely to the degree that is appropriate for each of the materials used in the mounting location and structures.
- After tightening up the screws and bolts, check that there is no unsteadiness and that the parts have been tightened securely.
- Use the specified tools and tighten the screws firmly.

When the unit is no longer going to be used, do not leave it lying around, but be absolutely sure to dispose of it properly.

For details on how to remove the unit, refer to “Removing the camera” (page 26).

When installing, transferring or disposing of the unit, be absolutely sure to hold it by its pedestal area.

Problems may result if the camera head is held or rotated.

Do not attach a filter, hood, extender or other parts to the unit.

Use the dedicated AC adapter and power cable provided with the unit.

Connect the AC adapter and power cable to the power inlet securely.

Installing the AC adapter

- Do not place the adapter directly onto a ceiling panel or other such surface.
  Extreme danger is posed when water has collected on the surface as a result of leaking rain, for instance.
  Secure the adapter firmly to the bottom or other surface of a reinforcing member made of channel steel where dust and other foreign matter will not accumulate.
  (Refer to page 24.)
- Secure the adapter firmly so that there will be no chance that it will fall off or fall down.
  Secure it using a strength which can withstand the mass (approx. 320 g [0.71 lbs.]) of the AC adapter.

Install the accessory AC adapter near the main power outlet, and position it in such a way that its power plug can be plugged into and unplugged from the outlet easily.

When connecting the AC adapter to a power outlet on the ceiling or on any other surface where dust may collect, wipe off the dust on the power plug at periodic intervals as an anti-tracking measure.

Power switch

This unit does not have a power switch. The power turns on when its power plug is connected to a power outlet. When the power is turned on, the pan, tilt, zoom and focusing operations are performed. Before proceeding with maintenance, be absolutely sure to disconnect the power plug from the power outlet.

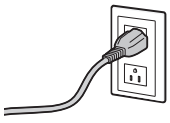
Connecting the power cable

Be absolutely sure to connect the power cable of the AC adapter through a circuit breaker using one of the following methods.

(1) Connect the power cable through a power control unit.
(2) Connect the power cable to a circuit breaker in a power distribution panel with a contact distance of 3.0 mm or more.
  Use a circuit breaker which is capable of shutting off all the poles of the main power supply with the exception of the protective ground conductor.
(3) Install the AC adapter near the power outlet, and connect it through the power plug.

Grounding

Before using the unit, check that the grounding wire has been fastened securely.
Check the grounding resistance (less than 100 Ω) of the grounding terminal.
When the power plug is to be converted into a 2-pin plug for use, first consult with your dealer. Then use a plug adapter which is equipped with a grounding terminal, and be absolutely sure to connect this terminal to ground.
In a case like this, be absolutely sure to make the connection to ground before proceeding to connect the power plug to the main power source.
Similarly, before the ground connection is to be disconnected, be absolutely sure to disconnect the power plug from the main power source first.



If there is a possibility of noise interference

Either wire the cables so that the power cable (ceiling light cord) of AC 100 V or more, and the signal cable are placed at least 1 meter (3.3 ft.) apart. Alternatively run each cable through its own metal conduit. (The metal conduits must be grounded.)

Radio signal interference

If the unit is positioned near a TV or radio transmitting antenna or a strong electrical field or magnetic field (such as that generated by a motor, transformer or power lines), its images may be distorted and/or the images may be affected by noise.

When connecting the cables, ensure that the connector areas will not be subject to any load.

Doing so may cause malfunctioning.

Allowing the generated heat to escape

This unit allows the heat generated inside to escape from its surfaces.
Do not install the unit in a location where it will be surrounded by walls or other surfaces and where heat will be trapped.

IMPORTANT

- **The product name and its electrical ratings are marked on its bottom panel.**

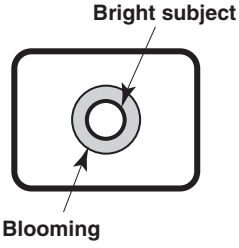
Operating precautions

Shoot under the proper lighting conditions.
To produce pictures with eye-pleasing colors, shoot under the proper lighting conditions.
The pictures may not appear with their proper colors when shooting under fluorescent lights.
Select the proper lighting as required.

To ensure a stable performance in the long term
Using the unit for prolonged periods in locations where the temperature and humidity levels are high will cause its parts to deteriorate, resulting in a reduction of its service life. (Recommended temperature: Max. 35 °C [95 °F])
Ensure that a cooling unit or heating unit will not blow any air directly toward the installation location.

Image persistence on the MOS sensor color filters
If parts of the MOS sensor are exposed continuously to spotlights or other bright lights, the color filters inside the MOS sensor will deteriorate, and the parts concerned may become discolored. The discoloration may be noticeable when the direction of fixed monitoring is changed.

Do not point the camera at strong lights.
When parts of the MOS sensor are exposed to spotlights or other strong lights, blooming (a phenomenon where the edges of strong lights become blurred) may occur.



Concerning the color reproduction of MOS sensors
Depending on the color tones of the subjects, the color reproduction may deteriorate: This is normal and not indicative of any trouble.

What happens with high-brightness subjects
Flare may occur if an extremely bright light source is pointed at the lens. In a case like this, change the angle or take some other remedial action.

When using the automatic functions
- If “FullAuto” has been selected as the setting for Scene on the camera menu, for example, all the auto settings will be turned on, and manual operations will no longer be possible for some of the items.
- When using the ATW (auto tracking white adjustment) function under fluorescent lights, the white balance may vary.
- In some situations, it may be hard to focus at the auto setting. In cases like this, select the manual setting, and focus manually.
- The appropriate brightness may not be obtained when shooting bright objects using the auto settings for the gain and iris. In cases like this, set the shutter speed to manual, and adjust.

Zooming and focusing
When the focus is set manually, out-of-focusing may occur during zooming.
After zooming, if necessary, either adjust the focus or set the focus to auto.
When using the focus at the manual setting, proceed with zooming after setting the focus position at the Tele end where the focusing accuracy is higher.
(However, if the distance from the unit to the subject is less than 1.5 meters [4.92 ft.], the subject may shift out of focus at the Wide end.)
If zooming is performed to the Tele end after having adjusted the focus at the Wide end, out-of-focusing may occur.

Concerning the zoom position when the power is turned on
When the unit’s power is turned on, the zoom, focus and iris return to the positions they occupied immediately before the power was turned off. (This happens for the focus and iris when they were set manually.)
However, this position may not be restored if, for instance, the power cable was disconnected during operation.

The unit comes with the safe mode.
The safe mode is function designed to protect the unit from damage.
For further details, refer to “Safe mode” (page 83 in the <Operations and Settings>).

Operating temperature range
Avoid using the unit in cold locations where the temperature drops below 0 °C (32 °F) or hot locations where the temperature rises above +40 °C (104 °F) since these temperatures downgrade the picture quality and adversely affect the internal parts.

Concerning the VIDEO OUT signal
The VIDEO OUT signal of the MULTI-I/F connector is provided in case the images are to be monitored.

Color bars
- Color bars are used to adjust the color phase, and the widths and positions of these bars may differ from other models.
- The setting for the Down CONV. Mode item when color bars are displayed is fixed at “Squeeze”.
  If “SideCut” or “LetterBox” has been selected, the HDMI output will not appear for a few seconds when the color bar display is set to ON or OFF.

Operating precautions

Turn off the power before connecting or disconnecting the cables.
Always be sure to turn off the power before connecting or disconnecting the cables.

Handle the unit carefully.
Do not drop the unit or subject it to strong impact or vibration. Doing so may cause the unit to malfunction.

When the unit is not in use
Turn off the unit's power when it is not in use.
When the unit is no longer going to be used, do not leave it lying around, but be absolutely sure to dispose of it properly.

Do not touch the optical system parts.
The optical system parts are the very heart of the camera. Under no circumstances must they be touched.
In the unlikely event that they have become dusty, remove the dust by using a camera blower or by wiping them gently with a lens cleaning paper.

Personal computer used
If the same image is displayed for a prolonged period on a PC monitor, the monitor may be damaged. Use of a screen saver is recommended.

Do not allow foreign matter to make contact with the rotating parts.
Otherwise, trouble may be caused.

Self-diagnosis function
When an abnormal operation caused by the effects of extraneous noise or other factors continues for more than 30 seconds during use, the unit's reset operation will automatically be triggered, after which the unit will restart. After it has started up again, the same initialization operation as when the power is turned on will be performed.
If abnormal operations occur frequently, it may be because high levels of extraneous noise are being generated in the environment where the camera has been installed.
These events will cause problems in the camera so consult with your dealer as soon as possible.

Keep the unit away from water.
Avoid all direct contact with water. Otherwise, problems may occur.

Maintenance
Turn off the unit's power before proceeding with maintenance.
Otherwise, you may injure yourself.
Wipe the surfaces using a soft dry cloth. Avoid all contact with benzene, paint thinners and other volatile substances, and avoid using these substances. Otherwise, the casing may become discolored.

Do not turn the camera head by hand.
Turning the camera head by hand may cause the unit to malfunction.

Use the unit in an environment with minimal moisture and dust.
Avoid using the unit in an environment with high concentration of moisture or dust since these conditions will damage the internal parts.

Disposal of the unit
When the unit has reached the end of its service life and is to be disposed of, ask a qualified contractor to dispose of the unit properly in order to protect the environment.

Concerning the wireless remote control (optional accessory)

This unit can be operated by remote control using a wireless remote control (model number: AW-RM50G) purchased separately.
Check out the following points before using the wireless remote control.

Consult your dealer concerning the purchase of a wireless remote control.

- **Operate the wireless remote control from positions less than 10 meters (32.8 ft.) away from the unit.**

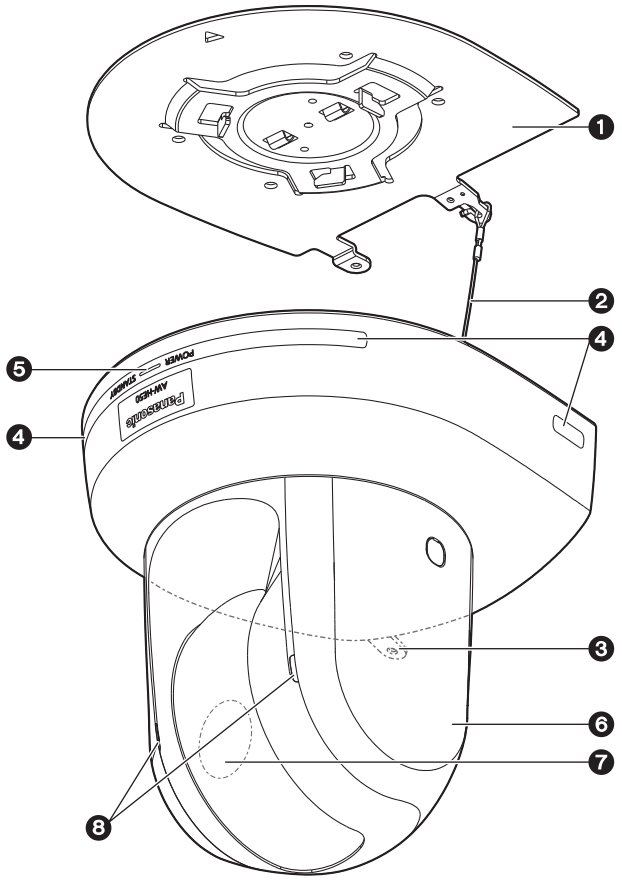
- **The wireless remote control may not work when it is pointed from certain angles at the unit.**
  From a place where the wireless remote control signal light-sensing area (hereafter, “light-sensing area”) can be seen, point the signal transmission window of the wireless remote control at the light-sensing area, and operate the buttons.
  It may prove to be more difficult to operate the unit when the remote control is operated from behind the unit.

- **If the unit is installed near fluorescent lights, plasma monitors or other such products or if the unit is exposed to sunlight, the effects of the light may make it impossible for the unit to be operated using the wireless remote control.**
  Be sure to follow the steps below for installation and use.
  - Take steps to ensure that the light-sensing area will not be exposed to the light from fluorescent lights, plasma monitors or other such products or from the sun.
  - Install the unit away from fluorescent lights, plasma monitors and other such products.

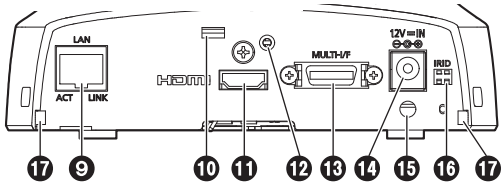
- **For about 10 minutes even after the batteries have been removed from the wireless remote control, the selection of the operation to be performed (the [CAM1], [CAM2], [CAM3] or [CAM4] button which was pressed last) will remain stored in the memory. When a longer period of time elapses, however, the selection is reset to the status established when the [CAM1] button was pressed.**

Parts and their functions

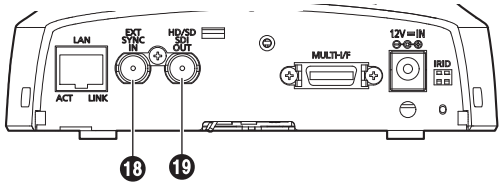
■ Camera unit



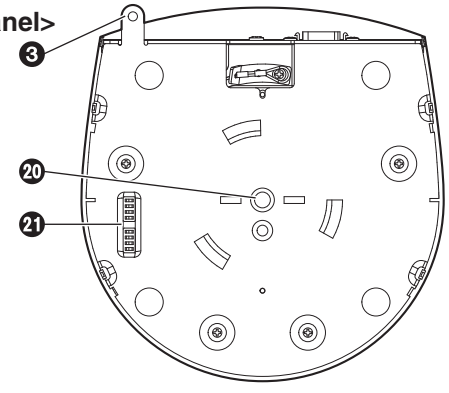
<Rear panel (AW-HE50H)>



<Rear panel (AW-HE50S)>



<Bottom panel>



❶ Mount bracket for installation surface (supplied accessory)
Mount this bracket onto the installation surface, and then attach the camera main unit to the bracket.

❷ Drop-prevention wire
Pull out the wire from the bottom panel of the camera main unit, and attach it to the hook of the mount bracket.

❸ Hole for securing the camera pedestal
This hole is provided in the bottom panel of the camera pedestal.

❹ Wireless remote control signal light-sensing area
Light sensors are located in four places; at the front of the camera pedestal and on either side.

❺ Status display lamp
This lights in the following way depending on the status of the unit.

Orange: When the standby status is established
Green: When the power is on
Red: When trouble has occurred in the unit
Green and blinks twice:
When a signal matched by the remote control ID has been received from the wireless remote control (optional accessory) while the power is on
Orange and blinks twice:
When a signal which is not matched by the remote control ID has been received from the wireless remote control (optional accessory) while the power is on

❻ Camera head
This rotates in the horizontal direction.

❼ Lens unit
This rotates in the up and down direction.

❽ Tally lamp
This comes on or goes off in response to the control from the controller but only when “On” has been selected as the tally lamp use setting.

⑨ LAN connector for IP control [LAN ACT/LINK]

This LAN connector (RJ45) is connected when exercising IP control over the unit from an external device.
Use a cable with the following specifications for the connection to the LAN connector:

When connecting through a hub:
LAN cable* (category 5 or above, straight cable), max. 100 meters [328 feet]
When a hub is not used:
LAN cable* (category 5 or above, crossover cable), max. 100 meters [328 feet]
***: Use of an STP (shielded twisted pair) cable is recommended.**

⑩ Anti-theft wire mounting hole

Use this hole to attach the wire bracket.

⑪ HDMI connector [HDMI] (AW-HE50H only)

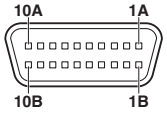
This is the HDMI video output connector.

⑫ Hole used to secure cable cover

Use the screw provided to secure the cable cover.

⑬ MULTI-I/F connector [MULTI-I/F]

This is the camera's HD/SD component video signal, composite video signal and camera's control signal connector.
Use the multi-interface cable purchased separately or a cable with the DX40M-20P (made by Hirose) connector specifications as the connecting cable.



- **The above figure shows the pin layout of the connector on the camera as seen from the outside.**

Pin No.	Signal name	Pin No.	Signal name
1A	Y OUT	6A	RX+_IN
1B	Y GND	6B	RX–_IN
2A	Pb OUT	7A	TX+_IN
2B	Pb GND	7B	TX–_IN
3A	Pr OUT	8A	GND
3B	Pr GND	8B	GND
4A	VIDEO OUT	9A	RX+_OUT
4B	VIDEO GND	9B	RX–_OUT
5A	TALLY	10A	TX+_OUT
5B	T GND	10B	TX–_OUT

⑭ DC IN connector [12V ⎓ IN ⊖-◉-⊕]

Connect the AC adapter supplied with the unit to this connector to supply the DC 12 V voltage to the unit.

⑮ Cable clamp

This is used to hold the cable connection to the DC IN connector and prevent it from becoming disconnected.

⑯ IR ID switches [IRID]

[CAM1]	[CAM2]	[CAM3]	[CAM4]
IRID	IRID	IRID	IRID

These are used to select the ID of the wireless remote control (optional accessory).
The IR ID switch settings "CAM1" to "CAM4" correspond to the [CAM1] to [CAM4] buttons on the wireless remote control.

⑰ Square holes (×2) for cable cover tabs

The tabs on the two sides of the cable cover are fitted into these holes.

⑱ SYNC IN connector [EXT SYNC IN] (AW-HE50S only)

This is the external sync signal input connector.
This unit supports the BBS (Black Burst Sync) signal as the external sync signal.

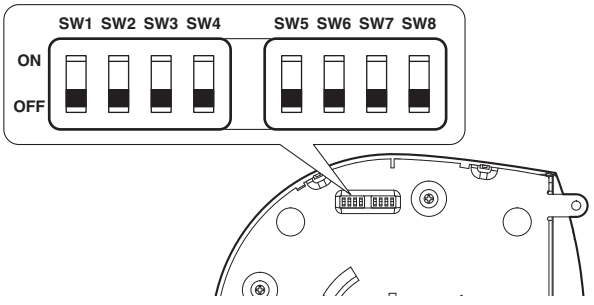
⑲ SDI OUT connector [HD/SD SDI OUT] (AW-HE50S only)

This is the SDI video signal output connector.

⑳ Threaded hole (thread: 1/4-20UNC) for mounting the camera

Use this hole when mounting the camera on a tripod, etc.

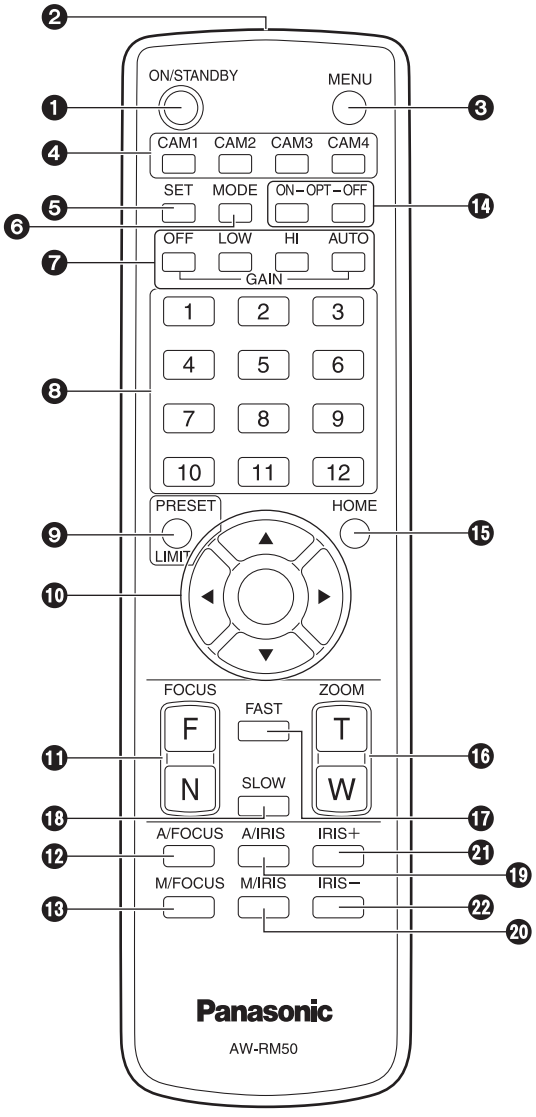
㉑ Service switches



The camera is used with all the switches at the OFF setting.

Parts and their functions

■ Wireless remote control (optional accessory)



❶ ON/STANDBY button

Each time this is pressed for 2 seconds, operation switches between turning on the unit's power and establishing the standby status.

Notes

- When operation is transferred to the standby mode: The current pan-tilt position is stored in the memory (as a POWER ON preset), and the panning/tilting moves so that the camera points in the backward-facing direction.
- When operation is transferred to the POWER ON mode: Panning/tilting moves to the position which was stored in the memory (as a POWER ON preset) when operation was transferred to the standby mode.

❷ Signal transmission window

❸ MENU button

Each time this is pressed for 2 seconds, operation switches between displaying the unit's menu and exiting the menu.
When it is pressed quickly (for less than 2 seconds) while a menu is displayed, the setting change is canceled.
Furthermore, the pan and tilt movement range limits (limiters) are set and released by operating the MENU button, PRESET/LIMIT button and the pan-tilt buttons ([▲], [▼], [◄] and [►]).
For details, refer to "Setting/releasing the limiters" (pages 81 to 82 in the <Operations and Settings>).

❹ CAM1 to CAM4 buttons

These are used to select the units that are to be operated.
Once a button has been selected, the unit corresponding to the selected button can be operated.

❺ SET button

If this button is pressed when one of the "Manual1 to 3" settings has been selected for "Scene" on the camera menu and the AWB A memory or AWB B memory has been selected by the white balance adjustment, the white balance is automatically adjusted and registered in the selected memory.

❻ MODE button

This is used to select the video signals which are output from the unit.
Each time it is pressed, the signals are switched between the color bar signals and camera video signals.

Note

- The setting for the Down CONV. Mode item when color bars are displayed is fixed at "Squeeze". If "SideCut" or "LetterBox" has been selected, the HDMI output will not appear for a few seconds when the color bar display is set to ON or OFF.

❼ GAIN buttons [OFF] [LOW] [HI] [AUTO]

These are used to set the gain.
The gain increase can be set in three steps using the [OFF], [LOW] and [HI] buttons.
[LOW] is set to 9 dB, and [HI] is set to 18 dB.
When the [AUTO] button is pressed, the AGC function is activated, and the gain is adjusted automatically depending on the light quantity.
The maximum gain of the AGC function can be set using the menu.

❽ Preset memory call buttons [1] to [12]

These are used to call the information on the unit's directions and other settings, which have been registered in the unit's preset memories No.1 to No.12, and reproduce those settings.
Settings in preset memories No.13 and above cannot be called from the wireless remote control.

⑨ PRESET/LIMIT button

This is used to register the settings in the preset memories or set or release the limiters.
When a preset memory call button is pressed while the PRESET/LIMIT button is held down, the information on the unit's current direction and other settings is registered in the call button.
Preset memory call buttons [1] to [12] correspond to the unit's No.1 to No.12 preset memories.
Furthermore, the pan and tilt movement range limits (limiters) are set and released by operating the PRESET/LIMIT button, MENU button and the pan/tilt buttons ([▲], [▼], [◄] and [►]).
For details, refer to "Setting/releasing the limiters" (pages 81 to 82 in the <Operations and Settings>).

⑩ Pan-tilt buttons and menu operation buttons [▲] [▼] [◄] [►] [○]

(1) These are used to change the unit's direction.
The unit is tilted in the up/down direction using the [▲] and [▼] buttons and panned in the left/right direction using the [◄] and [►] buttons.
The [○] button does not work during tilting and panning.
When the [▲] or [▼] and [◄] or [►] buttons are pressed at the same time, the unit moves diagonally.

(2) The buttons are used for menu operations when the unit displays the menus.
Use the [▲], [▼], [◄] and [►] buttons to select the menu items.
When a selected item has a sub-menu, the sub-menu will be displayed by pressing the [○] button.
When the cursor is aligned with a particular item and the [○] button is pressed on the setting menu at the bottom hierarchical level, the setting of the selected item blinks.
When the [○] button is pressed after the setting has been changed using the [▲], [▼], [◄] and [►] buttons, the setting stops blinking, and the new setting is entered.
With a regular menu, the new setting is reflected immediately after it has been changed if the change was made from the setting in the blinking status, but there are some menus (Scene, Format and Initialize) where it is reflected only after the [○] button has been pressed, the blinking has stopped and the new setting has been entered.
If the MENU button is pressed quickly (for less than 2 seconds) while the setting is in the blinking status, the change will be canceled, and the setting selected prior to the change will be restored.

⑪ FOCUS buttons [F] [N]

These are used to adjust the lens focus manually when the manual setting is established for the lens focus.
The focus is adjusted in the far using the [F] button and in the near using the [N] button.

⑫ A/FOCUS button

This is used when automatically adjusting the lens focus.

⑬ M/FOCUS button

This is used when manually adjusting the lens focus.
The FOCUS buttons ([F] and [N]) are used when performing the actual adjustment.

⑭ OPT buttons [ON] [OFF]

These are used for future expansion of the functions.
They are not used at the present time.

⑮ HOME button

When this is pressed for 2 seconds, the unit's direction (panning or tilting) returns to the reference position.

⑯ ZOOM buttons [T] [W]

These are used to adjust the lens zoom.
The zoom is adjusted in the wide-angle using the [W] button and in the telephoto using the [T] button.

⑰ FAST button

This is used to change the movement speed at which the panning, tilting, zooming and focusing operations are performed to the high speed.

Note

- The operating speed for panning and tilting when the preset memory settings have been called can be changed using the Preset Speed item of the camera menu.

⑱ SLOW button

This is used to change the movement speed at which the panning, tilting, zooming and focusing operations are performed to the low speed.

⑲ A/IRIS button

This establishes the setting for adjusting the lens iris automatically in line with the light quantity.

⑳ M/IRIS button

This establishes the setting for adjusting the lens iris manually.
The IRIS + and IRIS – buttons are used when performing the actual adjustment.

㉑ IRIS + button

This is used to adjust the lens iris in the opening direction.

㉒ IRIS – button

This is used to adjust the lens iris in the closing direction.

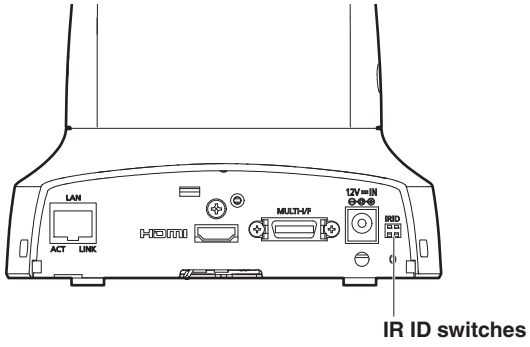
Setting the remote control IDs

The wireless remote control (optional accessory) is capable of operating up to four units.
IDs are used to set which units are selected when the [CAM1], [CAM2], [CAM3] and [CAM4] buttons on the wireless remote control have been pressed.

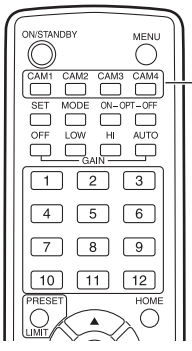
- When using a multiple number of units, set a different remote control ID for each unit.
- When using one unit, set the remote control ID to “CAM1” unless the setting needs to be changed.

Setting procedure

Operate the IR ID switch on the units rear panel, and select “CAM1”, “CAM2”, “CAM3” or “CAM4” as the remote control ID. (See page 16)
The IR ID switch settings “CAM1” to “CAM4” correspond to the [CAM1] to [CAM4] buttons on the wireless remote control.
(The factory setting is “CAM1”.)



IR ID switches



[CAM1] to [CAM4] buttons

How to install and connect the unit

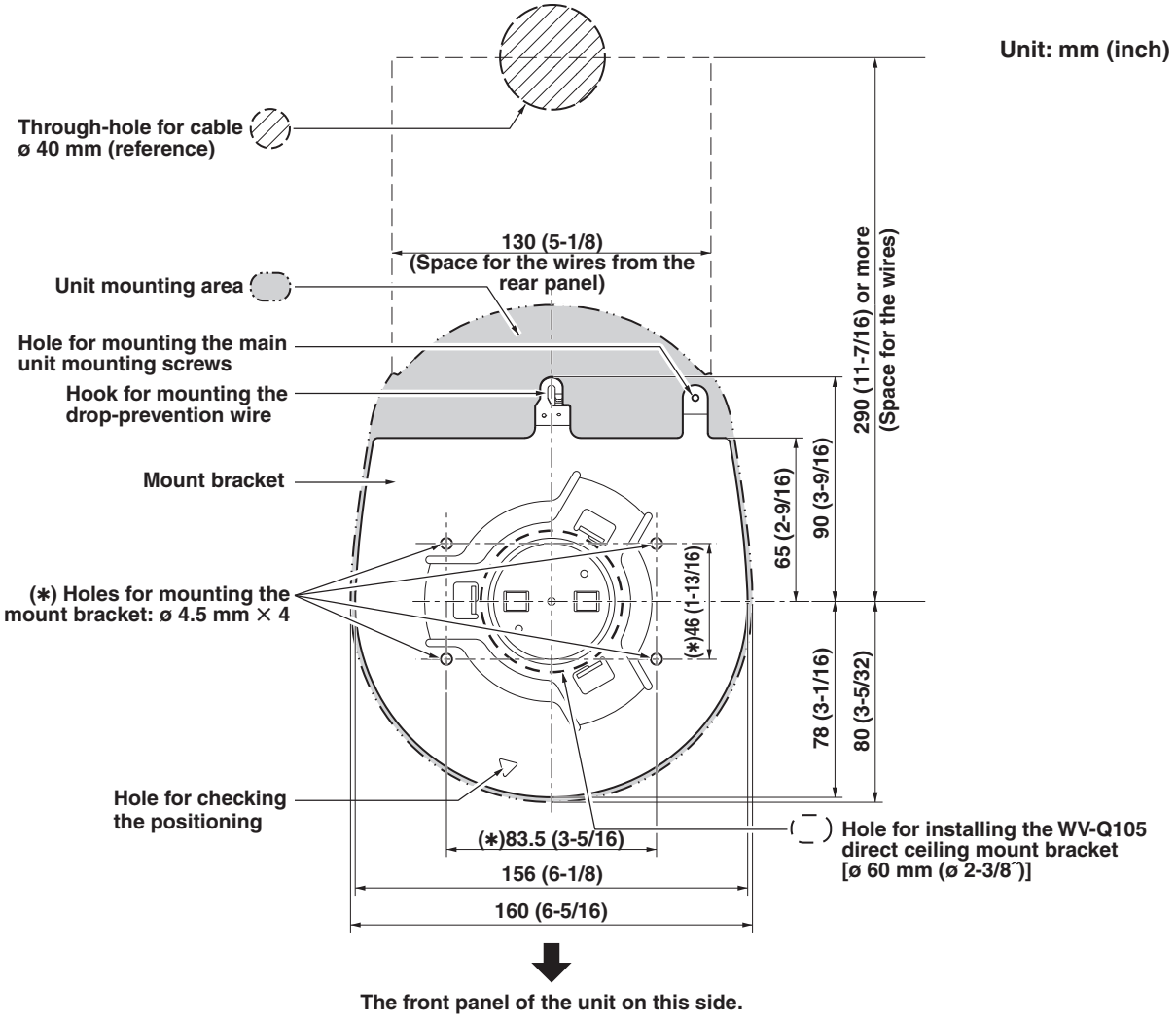
Be absolutely sure to read through the "Installation precautions" on pages 10 to 11.

The procedure given here is for the kind of installation where the unit is suspended from an overhead surface, but the same steps are followed for a stand-alone installation.

If the ceiling panel is not strong enough to bear the unit's weight, use the kind of mount bracket that is supported by anchor bolts between the concrete ceiling and ceiling panel. The unit supports the WV-Q105 direct ceiling mount bracket which is used solely for combination cameras. Use this bracket to install the unit. (See page 24)
In a case like this, the holes (ø 60 mm [ø 2-3/8˝]) for installing the direct ceiling mount bracket on the ceiling must be drilled in the ceiling panel.
It is also recommended that you provide an inspection space or opening for access purposes in the area near where the equipment is installed in order to facilitate installation and the wiring connections work.

1 Check the mounting space.

- Refer to the illustration, and determine where the unit is to be installed and in which direction it should be mounted. Factor in the unit mounting area and include space for the wires extending from its rear panel.
- The asterisk (✱) in the illustration marks the position and dimensions of the hole for mounting the mount bracket.


Unit: mm (inch)
Through-hole for cable ø 40 mm (reference)
130 (5-1/8) (Space for the wires from the rear panel)
Unit mounting area
Hole for mounting the main unit mounting screws
Hook for mounting the drop-prevention wire
Mount bracket
(✱) Holes for mounting the mount bracket: ø 4.5 mm × 4
Hole for checking the positioning
(✱)83.5 (3-5/16)
156 (6-1/8)
160 (6-5/16)
290 (11-7/16) or more (Space for the wires)
65 (2-9/16)
90 (3-9/16)
(✱)46 (1-13/16)
78 (3-1/16)
80 (3-5/32)
Hole for installing the WV-Q105 direct ceiling mount bracket [ø 60 mm (ø 2-3/8˝)]
The front panel of the unit on this side.

Notes

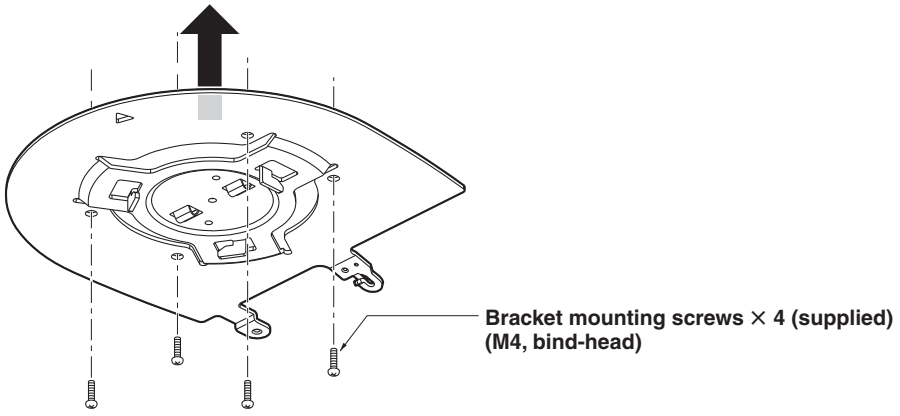
- Before proceeding to install and connect the main unit, connect the LAN cable, video output cable, interface cable, AC adapter cable and coaxial cables in the space above the ceiling panel, and then pass the cables through the cable holes.
- For a power outlet which is used on the ceiling, be absolutely sure to take measures to deal with the tracking that may be caused by the accumulation of dust and other foreign matter.

How to install and connect the unit

2 Mount the mount bracket onto the installation surface.

- Use the bracket mounting screws (M4, bind-head: 10 mm long) supplied with the unit.
- For proper clamping torque, securely attach the screws using the specified tools.

Screw diameter	Clamping torque
M4	1.47 N · m (15 kgf · cm)

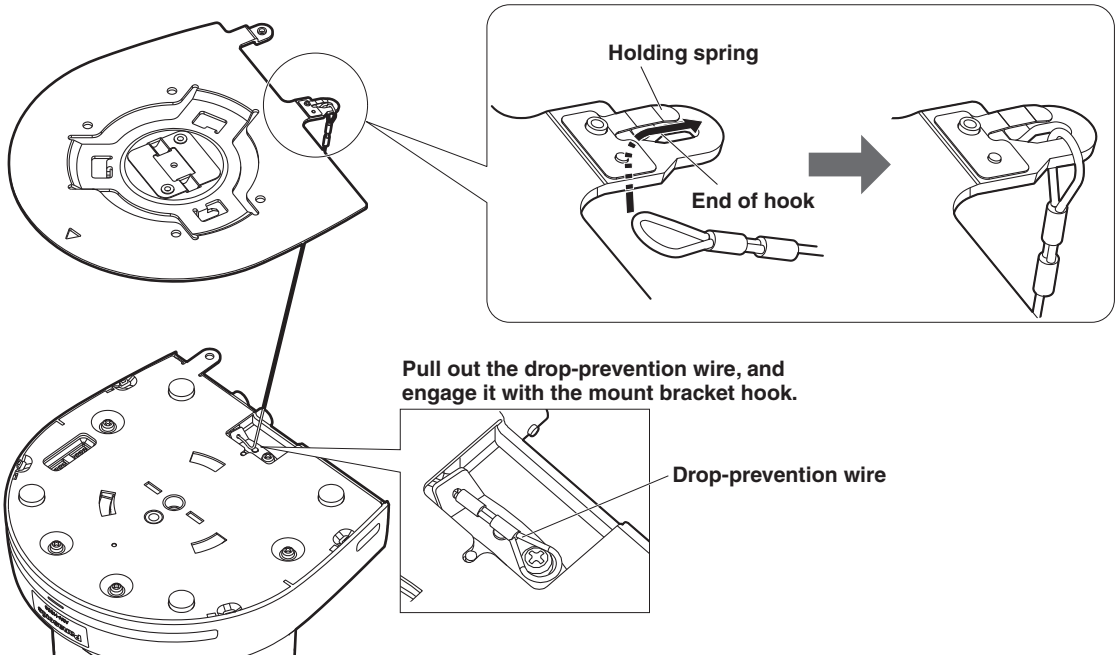


Note

- Use only the screws supplied with the unit. Do not use any other screws such as wood screws, nails, etc.

3 Attach the drop-prevention wire.

- Pull out the drop-prevention wire from the bottom panel of the unit, and engage the end with the wire ring through the hole of the mount bracket hook.
- Pull the drop-prevention wire, and check that it has been attached securely to the hook.


Holding spring
End of hook
Pull out the drop-prevention wire, and
engage it with the mount bracket hook.
Drop-prevention wire

Notes

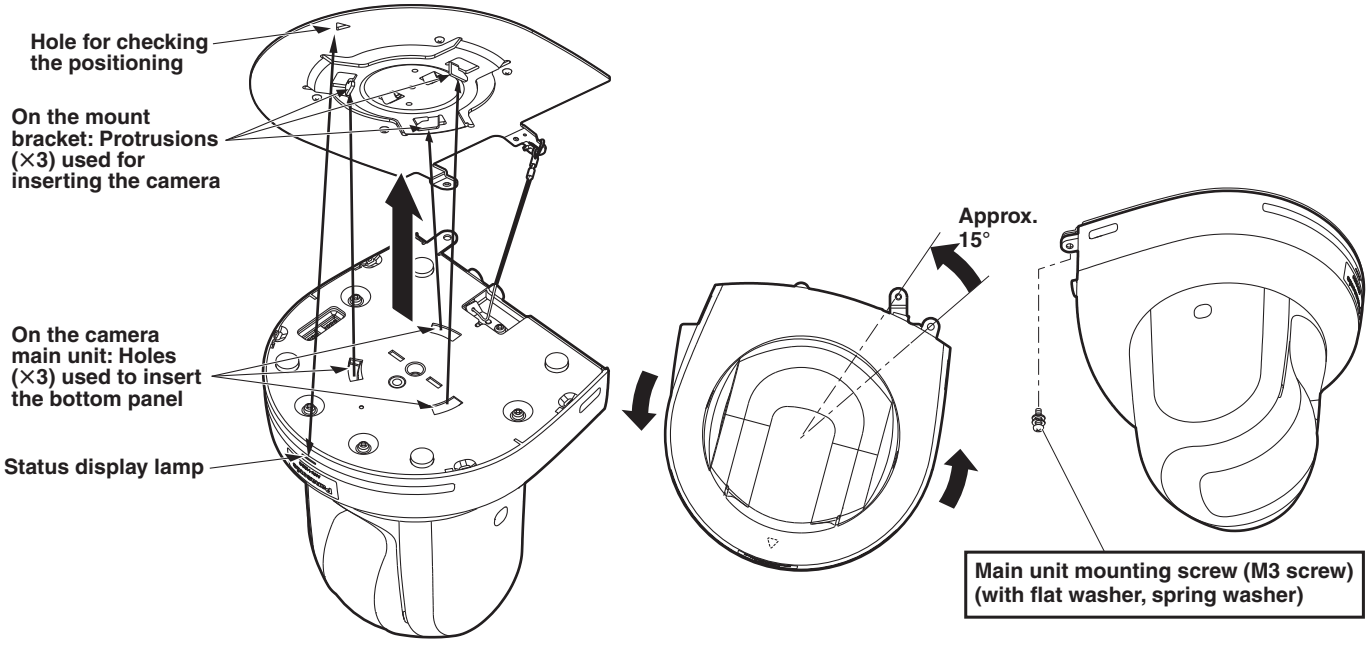
- Do not do this work while holding the camera head since doing so may result in malfunctioning of the unit.
- The drop-prevention wire is designed to be used for installation where the unit is suspended from an overhead surface so do not subject it to the weight of units other than the unit.

How to install and connect the unit

4 Mount the unit.

- Align the position of the hole for checking the positioning with the status display lamp.
- Align the holes on the camera main unit used to insert the bottom panel with the protrusions on the mount bracket used for inserting the camera, push the bracket and camera firmly together, and rotate the main unit by about 15 degrees in the direction of the arrow.
- Secure the mount bracket to the unit using the main unit mounting screws (M3) as supplied.
- Attach the mount bracket securely with the prescribed tool using the clamping torque below.
  Be absolutely sure to verify that none of the screws are loose.

Screw diameter	Clamping torque
M3	0.78 N · m (8 kgf · cm)


Hole for checking the positioning
On the mount bracket: Protrusions (×3) used for inserting the camera
On the camera main unit: Holes (×3) used to insert the bottom panel
Status display lamp
Approx. 15°
Main unit mounting screw (M3 screw) (with flat washer, spring washer)

Notes

- Do not do this work while holding the camera head since doing so may result in malfunctioning of the unit.
- Use only the screws supplied. Do not use any other screws.
- Check that the unit has been mounted securely with no tilting or wobbling.

5 Check the mounting.

Check out the following points.

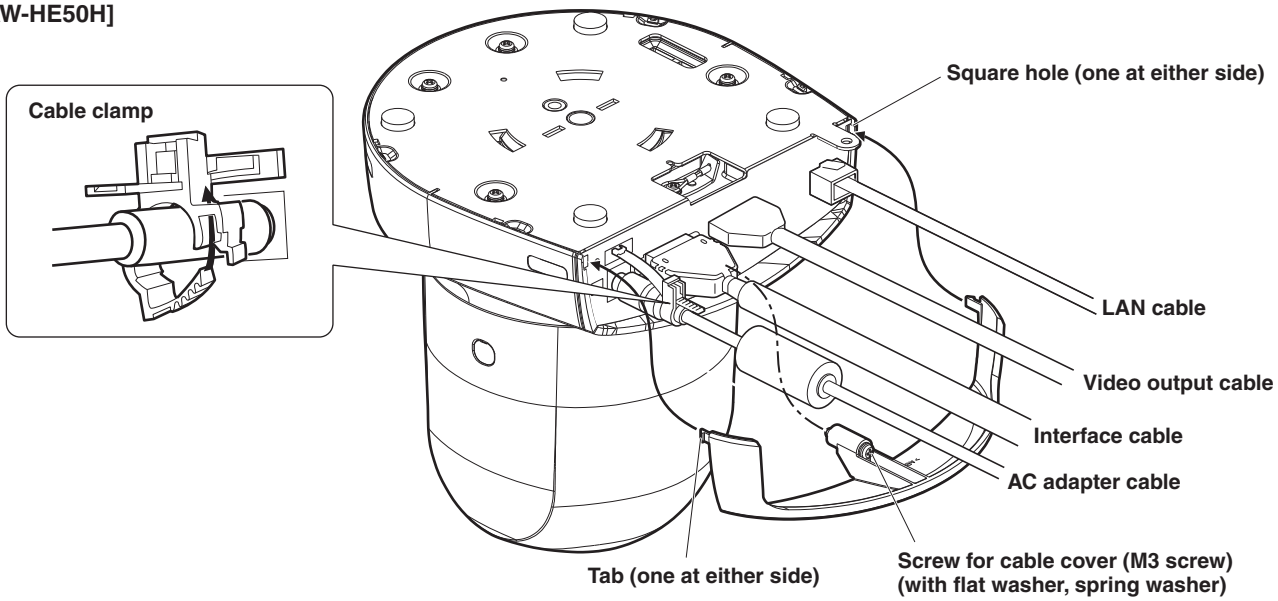
- **The main unit mounting screws must be mounted securely.**
- **The unit must not tilt, and it must be mounted exactly.**
- **The unit must be securely installed.**
- **The unit pedestal part must not rotate even when an attempt is made to turn it.**

How to install and connect the unit

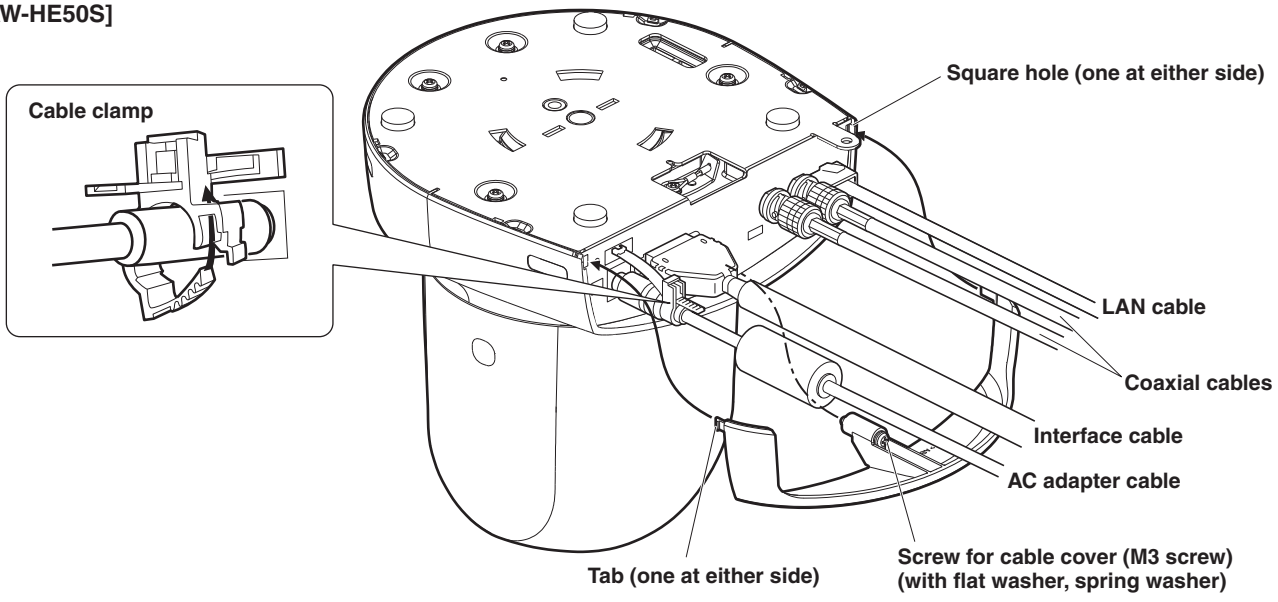
6 Connect the rear panel connectors.

Anchor the AC adapter cable in place using the cable clamp.

[AW-HE50H]



[AW-HE50S]



7 Attach the cable cover.

- Fit the two tabs on the cable cover into the square mounting hole at either side of the rear panel.
- Secure the cable cover using the screw (M3 × 20 mm) provided.

Screw diameter	Clamping torque
M3	0.78 N · m (8 kgf · cm)

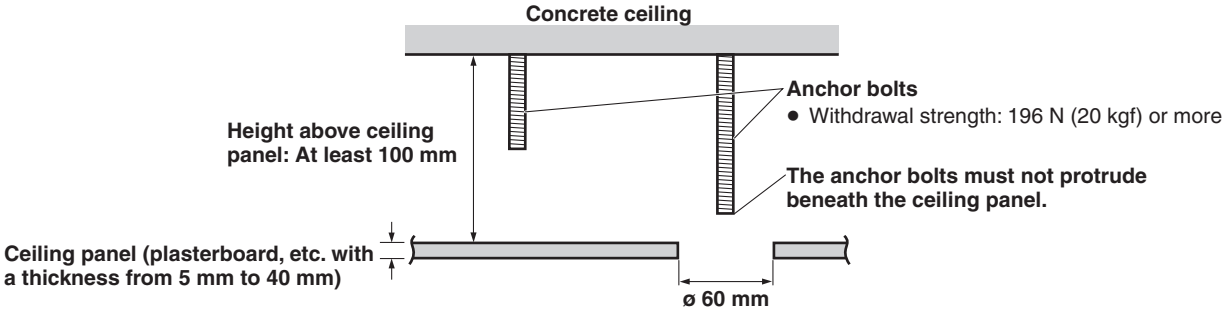
Note

- Engage the tabs on the cable cover so they fit into place perfectly, and check that the cover is not rickety.

How to install and connect the unit

■ When using the WV-Q105 (optional accessory)

It is recommended that you provide an inspection opening or other such space for access purposes in the area near where the equipment is installed in order to facilitate installation and the wiring connections work.
Before mounting the mount bracket, check that the installation location is strong enough to withstand the total mass (approx. 2.0 kg [4.41 lbs.]) which will be exerted once the camera is mounted.
Use the mount bracket where the space between the ceiling panel and the concrete ceiling is at least 100 mm high.
The bracket can be mounted where the thickness of the ceiling panel ranges from 5 mm to 40 mm.
The drop-prevention wire (supplied with the WV-Q105) must be used when mounting the direct ceiling mount bracket.

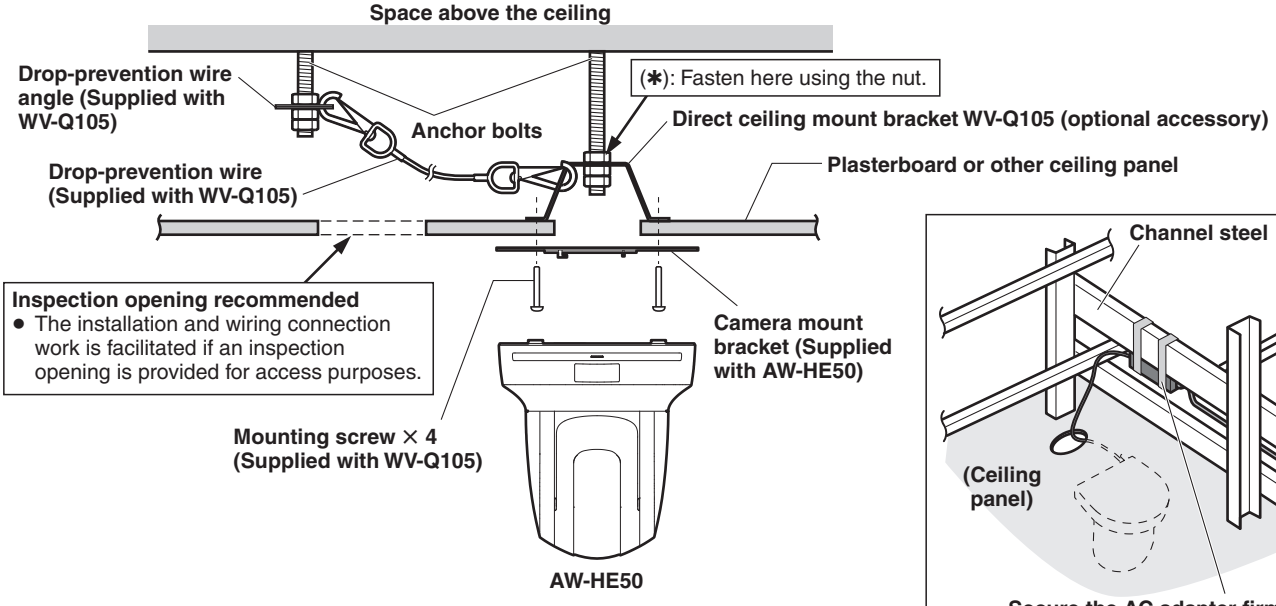

Concrete ceiling
Anchor bolts
● Withdrawal strength: 196 N (20 kgf) or more
Height above ceiling panel: At least 100 mm
The anchor bolts must not protrude beneath the ceiling panel.
Ceiling panel (plasterboard, etc. with a thickness from 5 mm to 40 mm)
ø 60 mm

1 Refer to the Operating Instructions of the WV-Q105 direct ceiling mount bracket, and attach the WV-Q105 as well as the drop-prevention wire angle and drop-prevention wire supplied with the WV-Q105 to the anchor bolts.

Mounting the anchor bolts and direct ceiling mount bracket (✱)
This job is facilitated if the direct ceiling mount bracket is loosely secured to the ceiling panel in one place, and the direct ceiling mount bracket and anchor bolts are vertically aligned before the nuts are tightened up.

2 First, remove the screws which were loosely fastened in step 1, and then align the camera mount bracket of the AW-HE50 with the screw holes in the WV-Q105 direct ceiling mount bracket and mount it in place.

- Use the mounting screws (the M4-L60 Phillips head screws with adhesive) supplied with the WV-Q105 as the mounting screws.
- Fasten the AC adapter securely to the bottom or other surface of the reinforcing member made of channel steel where dust and other foreign matter will not accumulate.
- Do not place the AC adapter directly onto the ceiling panel or other such surface.

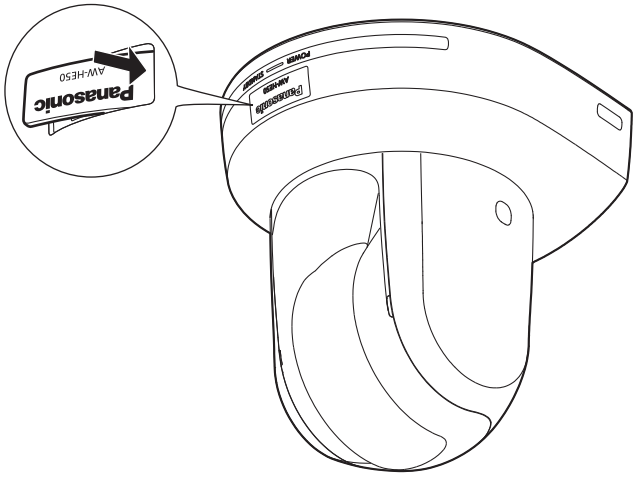

Space above the ceiling
Drop-prevention wire angle (Supplied with WV-Q105)
(✱): Fasten here using the nut.
Anchor bolts
Direct ceiling mount bracket WV-Q105 (optional accessory)
Drop-prevention wire (Supplied with WV-Q105)
Plasterboard or other ceiling panel
Inspection opening recommended
● The installation and wiring connection work is facilitated if an inspection opening is provided for access purposes.
Camera mount bracket (Supplied with AW-HE50)
Mounting screw × 4 (Supplied with WV-Q105)
AW-HE50
Channel steel
(Ceiling panel)
Secure the AC adapter firmly to a member made of channel steel.

3 Attach the AW-HE50 to the mount bracket.

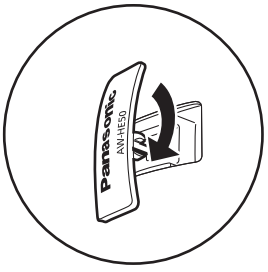
Changing the direction of the nameplate

When the unit is mounted on the ceiling, its nameplate will be upside down.
The direction of the unit's nameplate can be changed.

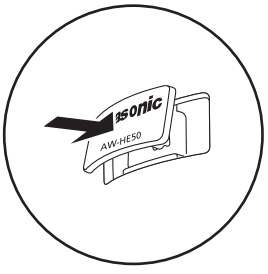
1 Push in the part indicated by the arrow, and pull out the nameplate.



2 Change the direction of the nameplate.



3 Push the nameplate back into place.



Removing the camera

1 **Turn off the circuit breaker and power.**

2 **Remove the cable cover.**

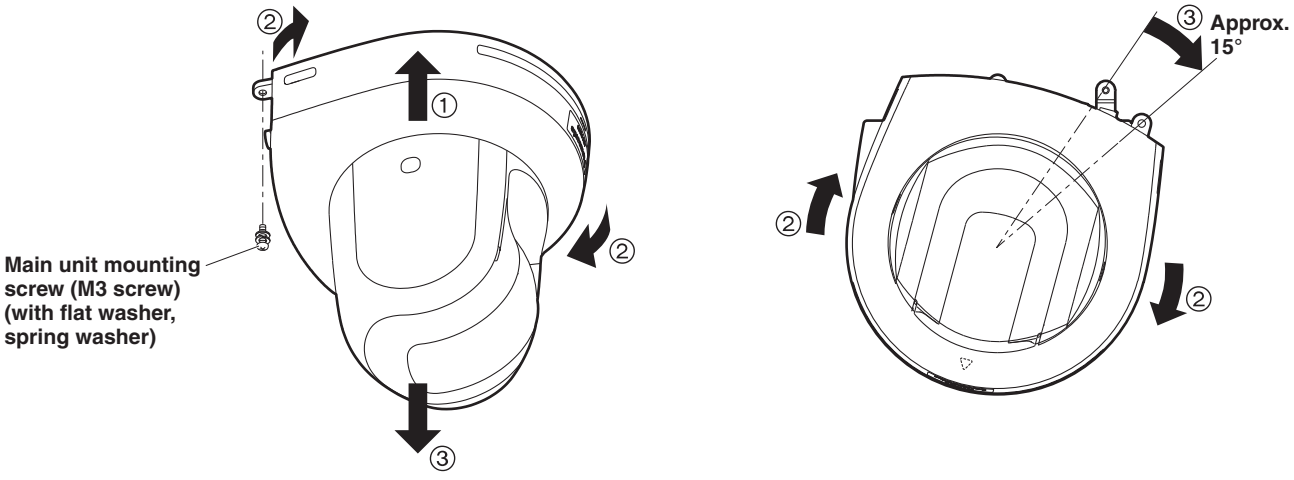
- Remove the screw (M3) for the cable cover used to secure the cover.
- Push the tab parts of the cover to disengage the cover.

3 **Disconnect the cables.**

Disconnect the power cable, video cable, and control cable, etc.

4 **Remove the main unit mounting screw used to secure the unit and mount bracket.**

5 **Push the unit (①). Turn it approximately 15 degrees away from the installed position (②), and remove it (③).**



Note

- Do not do this work while holding the camera head since doing so may result in malfunctioning of the unit.

6 **Disengage the drop-prevention wire from the mount bracket.**

Stand-alone installation (when the mount bracket is going to be used)

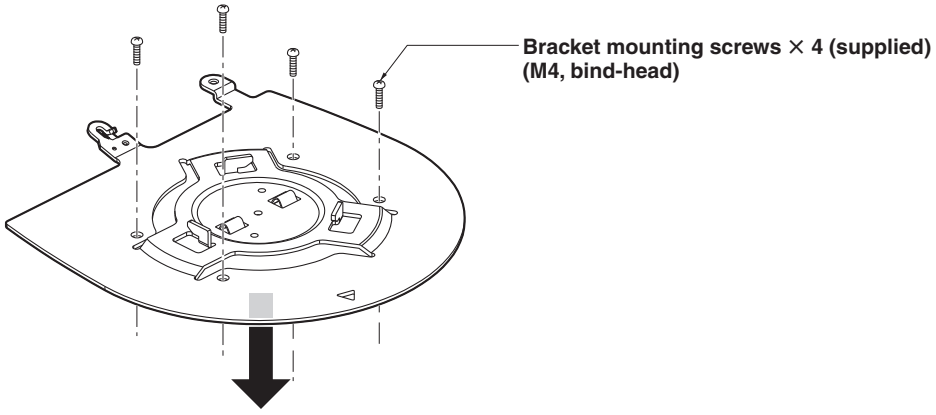
The same steps are followed as for the kind of installation where the unit is suspended from an overhead surface (pages 20 to 23).

1 Check the mounting space.

Note

- As with installing the unit suspended from an overhead surface, carefully check the space where the unit will be mounted, and then decide if it is appropriate to install the unit in that space.

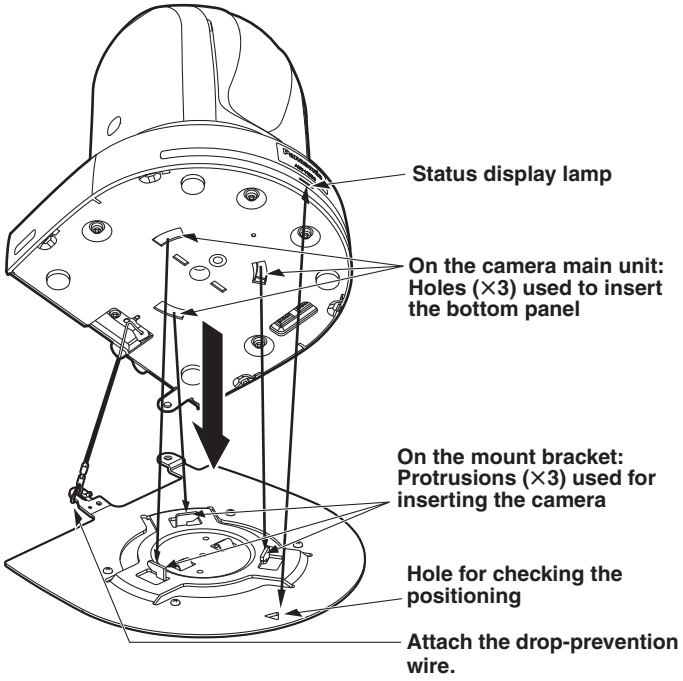
2 Mount the mount bracket onto the installation surface.

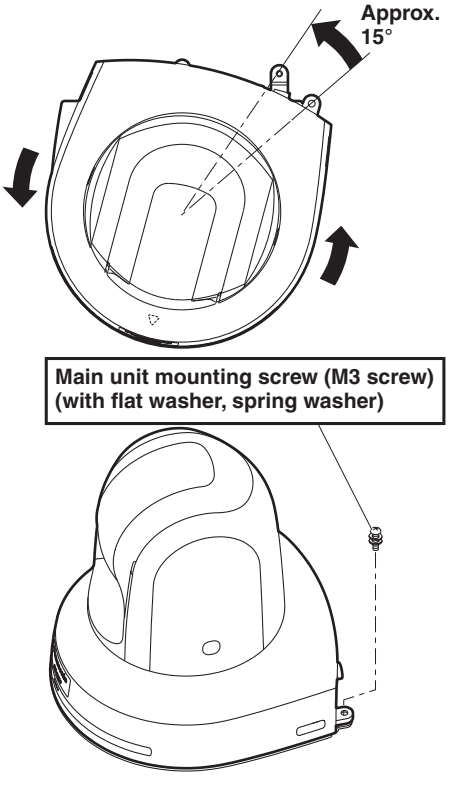


3 Attach the drop-prevention wire.

4 Mount the unit.

- Align the position of the hole for checking the positioning with the status display lamp.
- Align the holes on the camera main unit used to insert the bottom panel with the protrusions on the mount bracket used for inserting the camera, push the bracket and camera firmly together, and rotate the main unit by about 15 degrees in the direction of the arrow.
- Secure the mount bracket to the unit using the main unit mounting screws (M3) as supplied.
- For proper clamping torque, securely attach the screws using the specified tools.



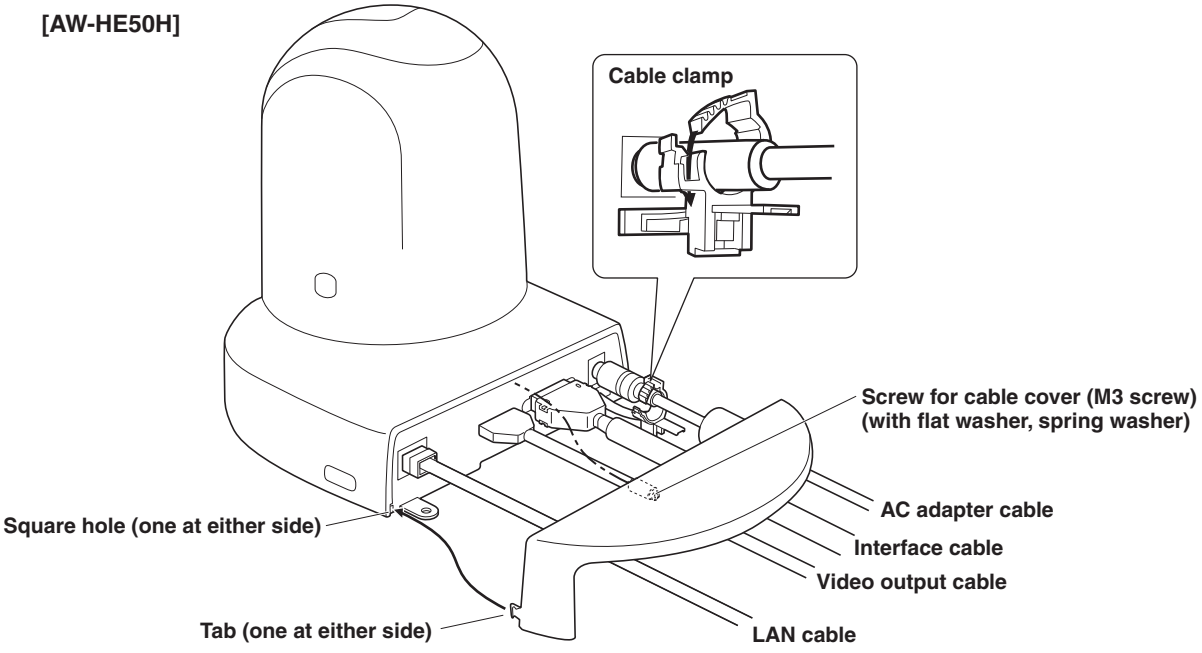


Stand-alone installation (when the mount bracket is going to be used)

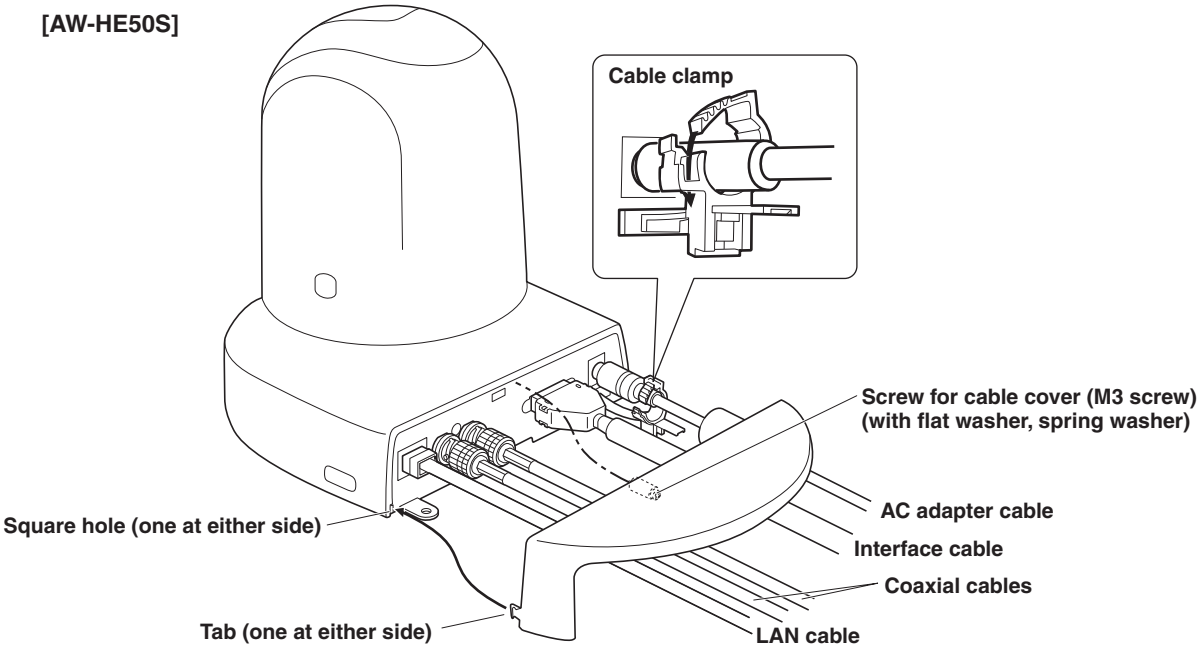
5 **Check the mounting.**

6 **Connect the rear panel connectors.**

[AW-HE50H]



[AW-HE50S]



7 **Attach the cable cover.**

Stand-alone installation (when the mount bracket is not going to be used)

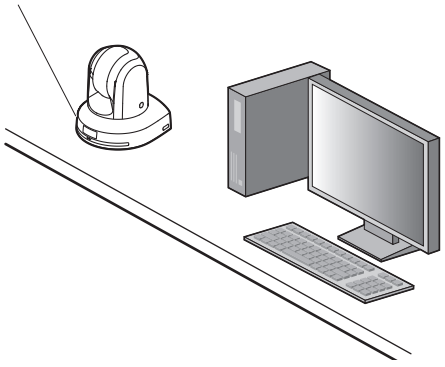
■ When installing the unit on a desktop

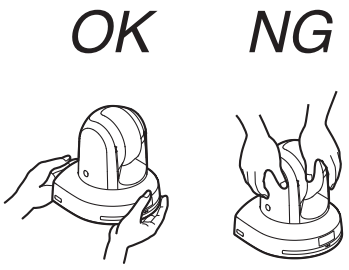
Place the unit flat on the surface.

Notes

- Install the unit in a stable location which will not be susceptible to shaking. If the unit is installed in a location which is susceptible to shaking, this will cause the unit's images to shake in turn.
- Take care not to allow the unit to fall or otherwise be damaged during installation.
- When carrying the unit, do not hold it by its head.
- Do not take hold of the camera head or rotate it. Doing so may cause malfunctioning.
- Take care not to pull the connected cables. Doing so may cause the unit to fall and/or it may result in injury.

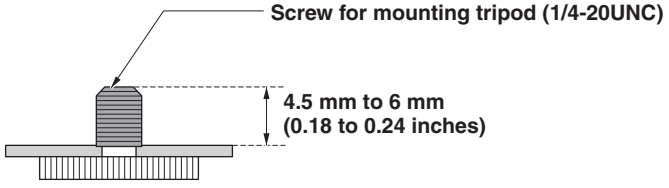
Ensure that the unit will not fall off.





■ When mounting the unit on a tripod

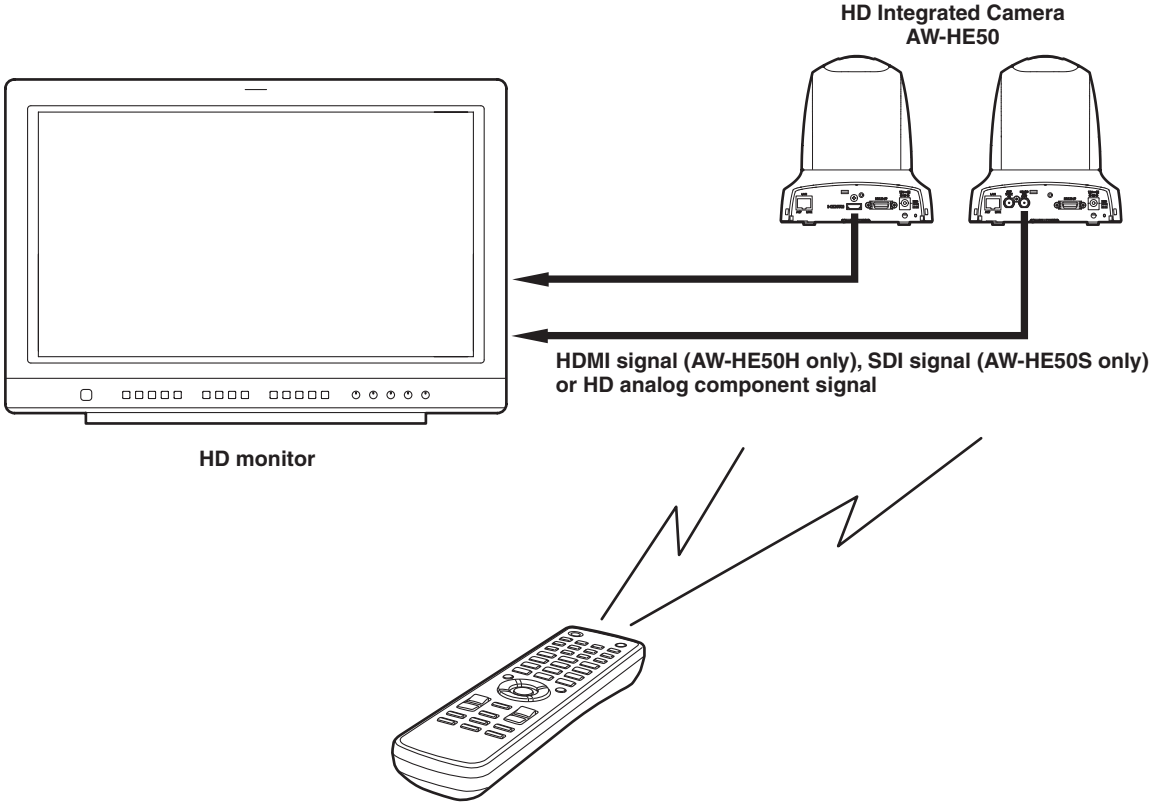
Attach the tripod to the threaded holes for mounting the camera on the camera's bottom panel.
Place the tripod on a completely flat and level surface.
Tighten the screws by hand to mount the tripod securely.
Use screw for mounting the tripod that satisfy the following standard.



Notes

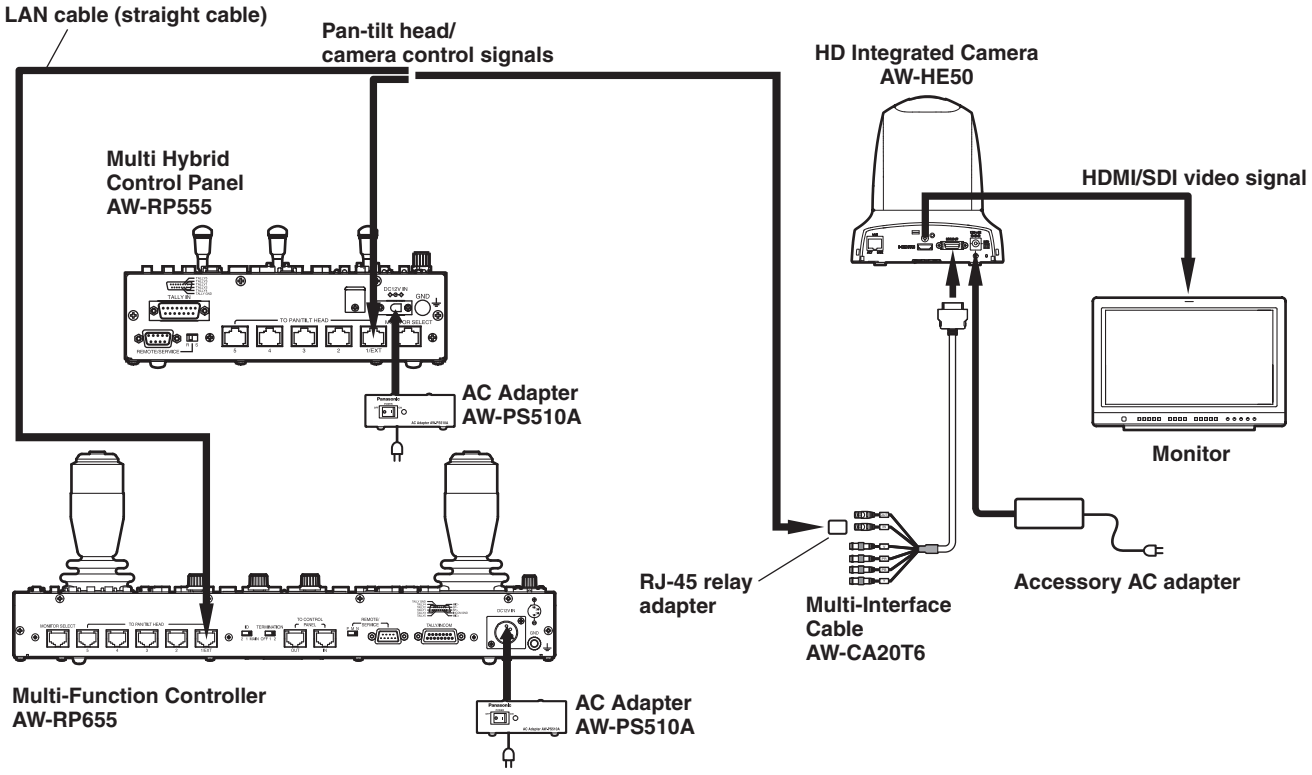
- Do not install the unit where people will be passing back and forth.
- When using the unit mounted on a tripod, do not put the tripod high above the floor level.
- Mount the unit securely so there is no looseness. Looseness may cause the unit to fall off and/or result in injuries.
- When the unit is going to be used for a prolonged period of time, take steps to ensure that the unit will not topple or fall over and that it will not fall off or fall down. After using the unit, restore the installation location to its original state without delay.

■ Connections with an HD monitor

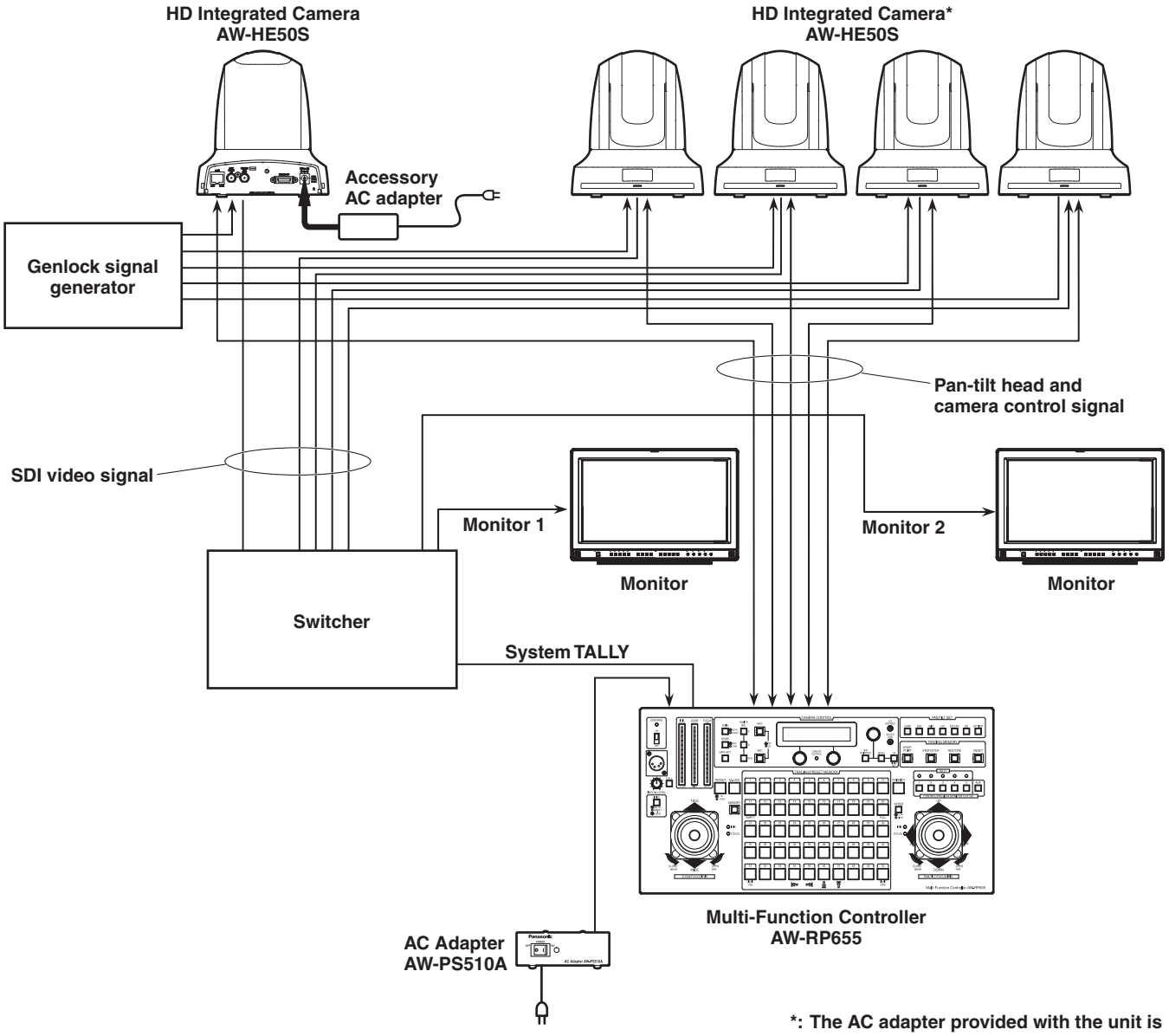


Wireless remote control (optional accessory)
Up to four units can be operated using one remote control.

■ Connections with a controller (AW-RP655 or AW-RP555)



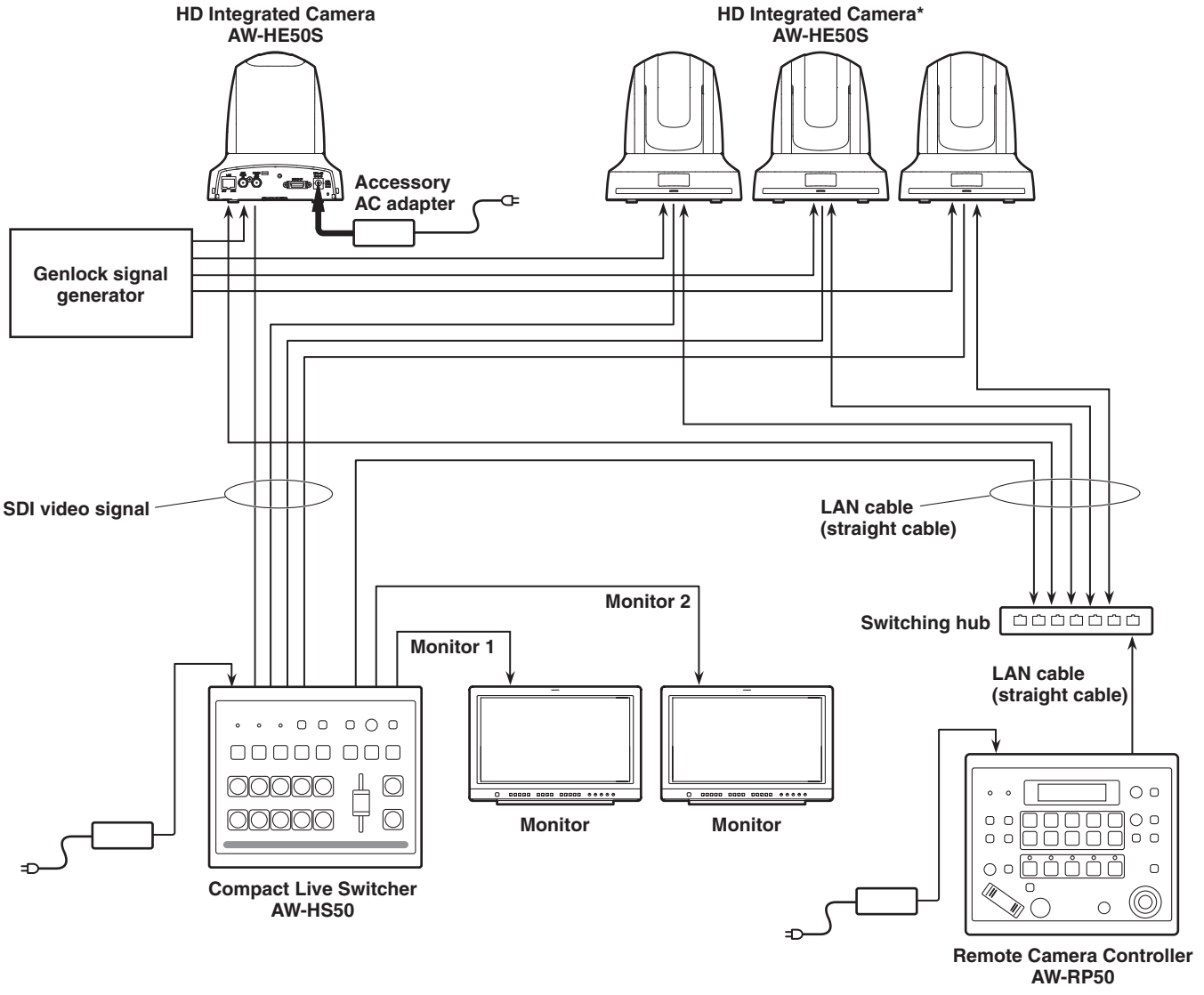
■ System example 1



*: The AC adapter provided with the unit is not shown in the above figure.

- SDI output is supported only by the AW-HE50S.

■ System example 2



*: The AC adapter provided with the unit is not shown in the above figure.

- SDI output is supported only by the AW-HE50S.

■ Installing the software

Be absolutely sure to read through the “Readme.txt” on the CD-ROM supplied with the unit first before attempting to install the software.

Software provided on the CD-ROM

- **Easy IP Setup Software (EasyIPSetup.exe)**
  This software establishes the unit’s network settings. For details, refer to the sections that follow.

■ Use the Easy IP Setup Software to establish the unit’s settings

The settings related to the unit’s network can be established using the Easy IP Setup Software supplied.
To establish the settings for a multiple number of units, the settings must be selected for each camera involved.
If the settings cannot be established using the Easy IP Setup Software, select the settings separately for the unit and PC on the network page of the setting menu. For further details, refer to the “Operating Instructions — <Operations and Settings>” (PDF file).

✎ Memo ✎

- If the Easy IP Setup Software is run when using Microsoft® Windows® XP Home Edition SP3, an important warning screen concerning security may appear.
  If this is the case, click the [Unblock(U)] button.
- If the Easy IP Setup Software is run when using Microsoft® Windows Vista®, you may be prompted to enter the password for the Administrator account.
  If this is the case, disable “User Account Control” from Control Panel.
- The Easy IP Setup Software is designed in such a way that when around 20 or more minutes have passed after the power was turned on, the MAC address and IP address of the target camera will no longer be displayed. It does this to improve the security.
  ➔ When “20min” is selected for the enable time among the Easy IP Setup accommodate period. (page 70 in the <Operations and Settings>)
- The Easy IP Setup Software cannot be used from a different subnet via a router.
- The unit cannot be displayed or its settings established using an older version of the Easy IP Setup Software (Ver.2.xx).

Network settings

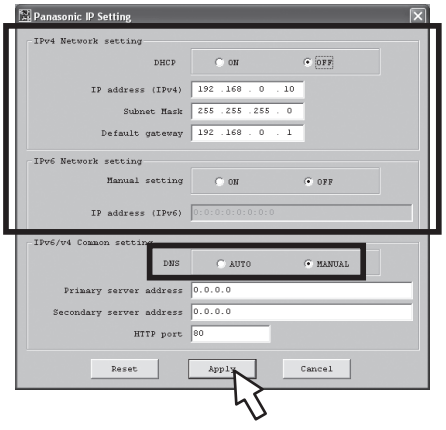
1 **Start the Easy IP Setup Software.**

2 **Click the MAC address/IP address of the camera to be set, and click the [IP setting] button.**

Notes

- When a DHCP server is being used, the IP address allocated to the unit can be checked by clicking the [Refresh] button of the Easy IP Setup Software.
- If IP addresses are in contention, the MAC address of the camera concerned is the one shown with the shading.

3 **Input the network items, and click the [Apply] button.**



Note

- When a DHCP server is being used, “DNS” of the Easy IP Setup Software can be set to “AUTO”.

Memo

- After the [Apply] button is clicked, it takes about 2 minutes for the settings in the unit to be completed. If the AC adapter or LAN cable is disconnected before the settings are completed, the settings will be canceled. In this case, repeat the steps to establish the settings.
- When a firewall (including software) has been introduced, enable access to all the UDP ports.

Troubleshooting

●Operation

Symptom	Cause and remedial action	Reference pages
No power	• **Is the AC adapter securely connected to the AC outlet?**	——
	• **If the power plug of the AC adapter connected properly?**	——
	• **If the unit is connected to the controller, has it been connected properly?** → Refer to the Operating Instructions of the controller.	P.31 to 33
	• **When the unit is being operated by the wireless remote control** → Also refer to the “Cannot operate using the wireless remote control” item.	——
Cannot operate (common to wireless remote control, controller)	• **Is the power on?** → If the unit’s status display lamp is off or if it has lighted up orange, it means that the unit’s power is not being supplied.	<Operations and Settings> P.7
	• **The safe mode function may have been activated.**	<Operations and Settings> P.83
	• **Have the limiter functions been set?**	<Operations and Settings> P.81 to 82
	• **Has the correct unit to be operated been selected?**	<Operations and Settings> P.9
Cannot operate using the wireless remote control	• **Have the remote control’s batteries run down or have the batteries been installed with their polarities reversed?** → If the status display lamp does not blink even when the wireless remote control is operated near the wireless remote control signal light-sensing area, it means that the batteries have run down. Replace the batteries.	——
	• **Is there a fluorescent light or plasma monitor near the unit and, if so, is the wireless remote control signal light-sensing area exposed to its light?**	P.14
Cannot operate using the controller	• **Is the unit connected to the controller properly?** → Refer to the Operating Instructions of the controller.	P.31 to 33
	• **It may be necessary to upgrade the version of the controller so that the controller will support the unit.** → Consult with your dealer.	——
The unit turns in the opposite direction to the one operated	• **Has the stand-alone (Desktop) installation setting been selected correctly?**	<Operations and Settings> P.46, P.65
	• **The reversal setting may have been established at the controller if the unit is connected to the controller.** → Refer to the Operating Instructions of the controller.	——

Troubleshooting

Symptom	Cause and remedial action	Reference pages
The adjustment of the slowest speed at which the camera is to start panning and tilting fails to be completed for the AW-RP655 or AW-RP555	**Do not attempt to adjust the slowest speed at which the camera is to start panning and tilting since this adjustment does not need to be undertaken when the unit is connected with the AW-HE50.** **If an attempt is made to undertake this adjustment, the following will occur:** ● **When the AW-RP655 is used:** **The LCD will keep showing that adjustment is still underway for the right side of the slowest start speed for panning and tilting, and it will not be possible to transfer to the next adjustments (top → left → bottom).** → Press the [MENU] button to cancel the adjustment of the slowest speed at which the camera is to start panning and tilting. ● **When the AW-RP555 is used** **The lamps of the [MEMORY] button and [MODE] button will not stop blinking.** → Operate the joystick, and cancel the adjustment of the slowest speed at which the camera is to start panning and tilting.	——
The web setting screen cannot be accessed	● **Has a LAN cable of category 5 or above been connected to the LAN connector for IP control?**	P.31 to 33
	● **Is the [LINK] LED of the LAN connector for IP control lighted?** → If it is not lighted, it means that something is wrong with the connection to the LAN or that the network at the connection destination is not working properly. Check the LAN cable for defective contacts, and check the wiring.	P.31 to 33
	● **Is the power on?** → If the unit's status display lamp is off or if it has lighted up orange, it means that the unit's power is not being supplied.	<Operations and Settings> P.7
	● **Has a valid IP address been set in the unit?**	<Operations and Settings> P.69 to 70
	● **Has the wrong IP address been accessed?** → Check the connections by following the steps below. Using the Windows command prompt: > ping [IP address which has been set in the camera] A reply returned from the unit signifies that there are no problems in operation. If a reply is not received, try following operation: • Reboot the unit, and within 20 minutes change the IP address using the Easy IP Setup Software.	——
	● **Has 554 been set as the HTTP port number?** → Use any port number, except for the numbers below which are used by the unit, for the HTTP port number. 20, 21, 23, 25, 42, 53, 67, 68, 69, 110, 123, 161, 162, 554, 995, 10669, 10670, 59000 to 59999, 60000 to 61000	<Operations and Settings> P.70

Troubleshooting

Symptom	Cause and remedial action	Reference pages
The web setting screen cannot be accessed	• **Has the same IP address setting been used for another device? Is there a lack of consistency between the address set and the network subnet at the installation destination?** → [When the personal computer is connected to the unit within the same subnet] Have the IP addresses of the unit and personal computer been set to the subnet shared by the unit and computer? Has the "Use proxy server" setting been selected by the web browser? When accessing the unit within the same subnet, it is recommended that the unit's address be set to the "Remove from proxy" address. [When the unit and personal computer are connected to different subnets] Has the wrong setting been selected as the default gateway setting for the unit?	—— <Operations and Settings> P.70
The settings on the web setting screen are not updated or displayed properly	• **Press the [F5] key on the keyboard of the personal computer to request that the settings be acquired.**	——
	• **Follow the steps below to delete the temporary Internet files.** ① In Internet Explorer, select [Tools] → [Internet Options]. ② Click the [Delete] button for "Temporary Internet files".	——
	• **If, in the Temporary Internet Files settings, the check "Every time I visit the webpage" setting is not selected for "Check for newer versions of stored pages", the web setting screen may not be displayed properly.** → Follow the steps below. ① In Internet Explorer, select [Tools] → [Internet Options]. ② When Internet Explorer 7.0 is being used: Click the [Settings] button in "Browsing history", and select "Every time I visit the webpage" under "Check for newer versions of stored pages". When Internet Explorer 6.0 is being used: Click the [Settings] button in "Temporary Internet files", and select "Every visit to the page" under "Check for newer versions of stored pages".	——
	• **The unit's ports may be filtered by the firewall or other function of the anti-virus software.** → Change the HTTP port number of the unit to a port number which will not be filtered.	——
It is not possible to download the setting files	• **Has the file download function been disabled?** → On the "Security" settings screen (Internet Options → Security) of Internet Explorer, click the "Custom Level" button under "Security level for this zone" to enable "File download" and "Automatic prompting for file downloads".	——

Troubleshooting

● Video

Symptom	Cause and remedial action	Reference pages
No pictures are displayed or the pictures are disturbed	● **Has the unit been connected properly to the other connected devices?**	P.30 to 33
	● **If the system is configured in such a way that the picture is also switched when the unit to be operated is selected, has the correct unit been selected?**	<Operations and Settings> P.9
	● **Has the video signal setting been selected correctly?**	<Operations and Settings> P.43, P.64
The picture is flipped vertically	● **Has the stand-alone (Desktop) installation setting been selected correctly?**	<Operations and Settings> P.46, P.65
Multiple color bands (color bars) are displayed	● **Switch to the camera picture.**	<Operations and Settings> P.13
The menu screen is displayed	● **Exit the menu.**	<Operations and Settings> P.30 to 37
It is difficult to view the menu screens	● **Depending on the HDMI monitor you are using, you may experience one or more of the symptoms described below. These symptoms are especially noticeable when any of the SD formats is used: This is normal and not indicative of any trouble.** • The resolution of the characters in the menu displays changes as the background image changes. • Depending on the edge enhancement setting established for the monitor, white lines appear in front of the black shadows of the menus. • Depending on the edge enhancement setting established for the monitor, the background colors may be superimposed onto the white parts of the menus.	——
No auto focusing	● **Is the focus set to manual?** → Auto focusing is initiated as soon as the focus is set to auto.	<Operations and Settings> P.13
	● **In some situations, it may be hard to focus at the auto setting.** → In cases like this, select the manual setting, and focus manually.	<Operations and Settings> P.15
The subject is not brought into focus during zooming when the manual setting is used for the focus	● **Was the focus adjusted at the Tele end?** → First adjust the focus at the Tele end where the focusing accuracy is higher, and then proceed with the zooming.	——
	● **Under some operating conditions, it may be hard to bring subjects into focus.** → In such cases, use the focus at the auto setting.	<Operations and Settings> P.13

Troubleshooting

Symptom	Cause and remedial action	Reference pages
Ring-shaped reflections appear in the four corners of the images	• **These are caused by the reflections of the light between the lens and the cover in front of the lens. Find a way of optimizing the position of the lighting relative to the position of the unit, and install and use the unit in a location where the reflections will not occur.**	—
Something is wrong with the coloring of the pictures	• **Activate the ATW (Auto tracking white adjustment) function.**	<Operations and Settings> P.24
	• **In some situations, the proper colors may not be reproduced using the ATW function.** → In cases like this, proceed with the white balance adjustment.	<Operations and Settings> P.22 to 24
The pictures are too light or too dark	• **Either select the auto setting for the iris or select the manual setting and adjust the iris manually.**	<Operations and Settings> P.16
	• **The pictures may be dark if the video signal cables are too long because this will cause signal attenuation.**	—
The subjects appear distorted	• **If a subject has suddenly crossed in front of the camera, it may appear slightly distorted because this camera uses a MOS image sensor.** **This is normal and not indicative of any problem.**	—
When the flash is fired during shooting, only the top or bottom of the screen becomes lighter	• **With a MOS image sensor, the shooting timing differs slightly between the top left and bottom right of the screen. This means that when the flash is fired, the bottom of the screen will become lighter in the field concerned and the top will become lighter in the next field.** **This is normal and not indicative of any problem.**	—
The brightness changes cyclically or the colors change, and horizontal stripes can be seen passing across the screen	• **These phenomena (flicker) may occur under the illumination produced by fluorescent lighting, mercury bulbs or other types of discharge tubes.** **This is normal and not indicative of any problem.** **At a time like this, it is recommended that the electronic shutter speed be set to 1/100 in areas with a 50 Hz power line frequency or to OFF in areas with a 60 Hz power line frequency.**	—
When fine lines or cyclical patterns are shot, flickering is seen or coloring is added to them	• **This phenomenon occurs because the pixels are arranged systematically on each image sensor. It is noticeable when the spatial frequency of a subject and the pixel pitch are brought into proximity so change the camera angle or take other such action.**	—

Troubleshooting

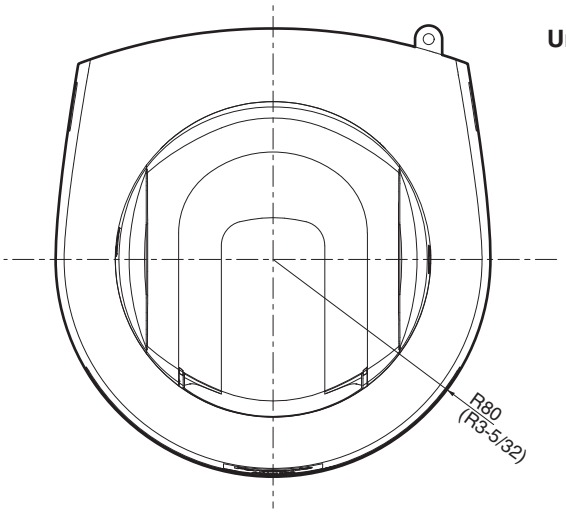
●Web settings

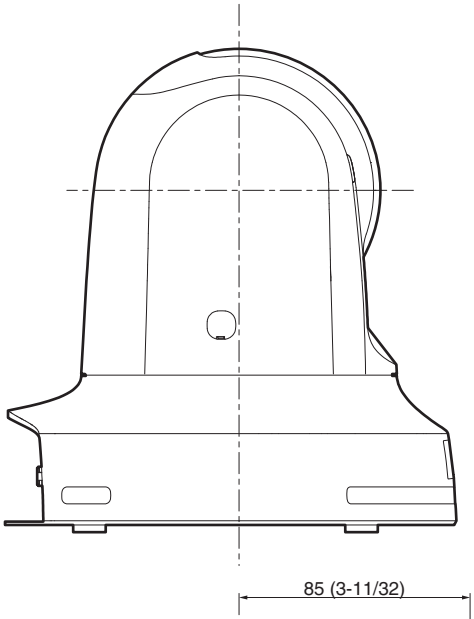
Depending on the OS installed on the PC, the following may occur. Follow the instructions below when the following has occurred. By performing the following solutions, other applications and the security level may not be affected.
The “Information bar” expressed in the following symptom and solutions will be displayed just below the address bar only when there is information to communicate.

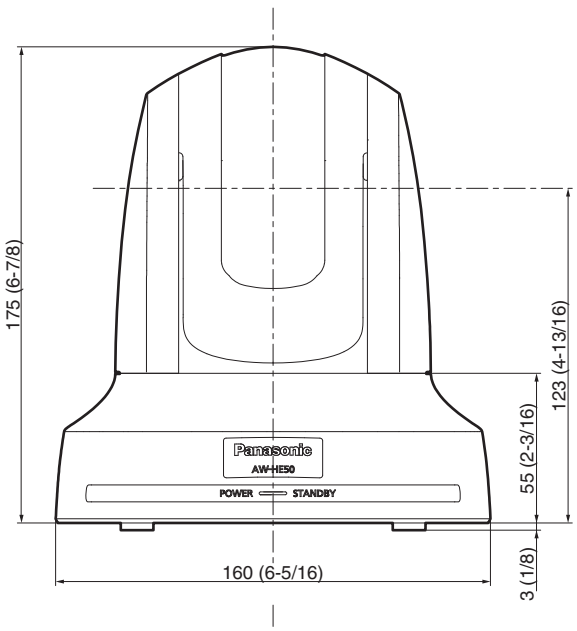
Symptom	Cause and remedial action	Reference pages
The following message is displayed on the information bar. “Pop-up blocked. To see this pop-up or additional options click here.”	● **Click the information bar and select “Always Allow Pop-ups from This Site”. The dialog window saying “Allow pop-ups from this site?” will be displayed. Click the [Yes] button.**	—
An unnecessary status bar or scroll bar is displayed on the pop-up window	● **Click “Internet Options” under “Tools” of the menu bar of Internet Explorer®, and then click the [Security] tab. Click “Internet” in the “Select a Web content zone to specify its security settings:” section. Then, click the [Custom Level...] button to open the “Security Setting” window. Under “Miscellaneous”, select “Enable” for “Allow script-initiated windows without size or position constraints”. Click the [OK] button. When the warning window is displayed, click the [Yes] button.**	—

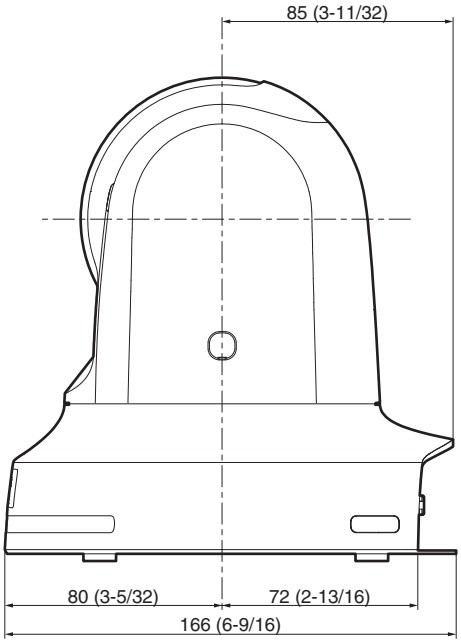
Appearance

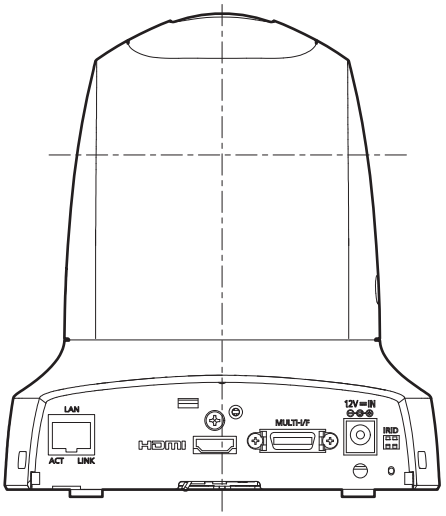
Unit: mm (inch)



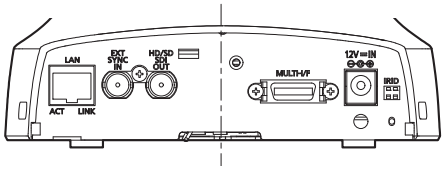








AW-HE50H



AW-HE50S

Specifications

Power requirements:	DC 12 V ±10 % (AC adapter provided)
Power consumption:	DC 12 V, 1.2 A (AW-HE50H) DC 12 V, 1.3 A (AW-HE50S)

⚠ indicates safety information.

■ GENERAL

Ambient operating temperature:
0 °C to +40 °C (32 °F to +104 °F)

Storage temperature: –20 °C to +50 °C (–4 °F to +122 °F)

Allowable humidity ranges:
20 % to 90 % (no condensation)

Mass: Approx. 1.4 kg (3.09 lbs.)

Dimensions (W × D × H):
160 × 166 × 178 mm
(6-5/16″ × 6-9/16″ × 7″)
[excluding protrusions, cable cover, direct ceiling mount bracket]

Finish: Light silver matte finish

Controller supported: AW-RP655, AW-RP555, AW-RP50
- It may be necessary to upgrade the version of the controller so that the controller will support the unit.

■ INPUT

Input connector: DC 12 V IN,
EXT SYNC IN (BNC)
(AW-HE50S only)
- BBS (Black Burst Sync) signal supported

■ OUTPUT

Video output:

[AW-HE50H]	HDMI: HDMI connector	
[AW-HE50S]	SDI: Compliant with the SMPTE292M/ SMPTE259M standards/75 Ω (BNC × 1)	
[Specifications common to both models]	Composite: 1.0 V [p-p]/75 Ω (MULTI-I/F × 1)	
Y/Pr/Pb	[HD]	Y: 1.0 V [p-p]/75 Ω, Pr · Pb: 0.7 V [p-p]/ 75 Ω (MULTI-I/F × 1)
	[SD]	Y: 1.0 V [p-p]/75 Ω, Pr · Pb: 0.7 V [p-p]/ 75 Ω (MULTI-I/F × 1)

- For Y/Pr/Pb, the 1080, 720 or SD format is selected depending on the format setting.

■ INPUT/OUTPUT

Input/Output connector: LAN connector for IP control
(RJ-45)
CONTROL IN RS422A
(MULTI-I/F)

Specifications

■ FUNCTIONS AND PERFORMANCE

[Camera unit]

Imaging sensors: 1/3˝ Full-HD MOS

Lens: Motorized 18× zoom, f/1.6 to 2.8 (f=4.7 to 84.6 mm; 35 mm equivalent: 36.9 mm to 664.5 mm)

Focus: Switching between auto and manual

Focus distance: Entire zooming range: 1.5 m (4.9 ft.)
Wide end: 30 cm (0.98 ft.)

Color separation optical system: On-chip color filter system

Minimum illumination: 3 lx (50 IRE, F1.6, +36 dB)

Horizontal resolution: 850 TV lines Typ (Center area)

Gain selection: Auto, 0 dB, 3 dB, 6 dB, 9 dB, 12 dB, 15 dB, 18 dB

Storage mode: 0 dB, 6 dB, 12 dB, 18 dB

Electronic shutter speed: 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
Synchro scan: 60.24 Hz to 646.21 Hz

Gamma: Off, Normal (Low, Mid, High), Cinema

White balance: AWB A, AWB B, ATW

Chroma amount variability: 7 levels variability

Scene file: FullAuto, Manual1, Manual2, Manual3

Color bars: FULL BAR

Output format: HD 1080: 59.94i,
720: 59.94p
SD 480: 59.94i

Synchronization system:
[AW-HE50H]
Internal synchronization
[AW-HE50S]
Internal/External synchronization (BBS)

[Pan-tilt head unit]

Installation method: Stand-alone (Desktop) or suspended (Hanging)
- To ensure safety, the unit must be secured using the mount bracket provided.

Camera/pan-tilt head control:

IP connecting cable	When connecting through a hub: LAN cable* (category 5 or above, straight cable), max. 100 m (328 ft.) When a hub is not used: LAN cable* (category 5 or above, crossover cable) max. 100 m (328 ft.)
RP connecting cable	LAN cable* (category 5 or above, straight cable), max. 1000 m (3280 ft.) (Control only: Use of an external device or some other means must be provided separately in order to extend the video signal connections.)
Protocol	RS-422A, AW series protocol

***: Use of an STP (shielded twisted pair) cable is recommended.**

Pan/tilt operation speed: Max. 90°/sec. or more

Panning range: ±175°

Tilting range: +90° to –30°
- Depending on the pan or tilt position, the camera may be reflected in the image.

Quietness: NC35 (normal speed), NC40 (when preset)

■ AC adapter

Input: AC 100 V to 240 V, 1.5 A, 50/60 Hz

Output: DC 12 V, 2.5 A, 30 W

The provided power cable is for 125 V AC or less. Use it within AC 100 V to 120 V.

■ Optional accessories

- **Wireless remote control AW-RM50G (Size "AA" dry battery × 2, obtained separately)**
- **Direct ceiling mount bracket WV-Q105**
- **Multi-interface cable AW-CA20T6G**

Mass and dimensions shown are approximate.
Specifications are subject to change without notice.

Memo

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Printed in Japan
F0410S1050 D